

ICT in Schools Research and Evaluation Series – No.20

Evaluation of Curriculum Online

Report of the follow-up survey of schools

A report to the DfES by Sarah Kitchen and Steven Finch, National Centre for Social Research



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Summary

This report contains the findings of the second survey of schools carried out as part of the evaluation of Curriculum Online. The survey was conducted in maintained primary and secondary schools in England during the autumn term 2003. One questionnaire collected school-level information for each school and additional questionnaires collected data for selected subject areas. This report includes findings related to: awareness of Curriculum Online; use of the website; the impact of eLearning Credits on spending and purchasing processes; changes in the use of ICT resources in the classroom; and attitudes towards the role of ICT in teaching and learning.

- Around three-quarters of subject respondents (74% in primary schools, 77% in secondary schools) were aware of Curriculum Online. The majority of those aware of Curriculum Online did not feel they knew a great deal about it, with just 2% of subject respondents saying they knew 'a lot' and 22% 'a fair amount'. School respondents in secondary schools tended to feel they knew more about Curriculum Online, with 16% claiming to know 'a lot' and 54% 'a fair amount'. Just over half (53%) of school respondents in primary schools knew 'a lot' or 'a fair amount' about Curriculum Online. Nearly two-thirds (64%) of primary subject respondents and 52% of secondary subject respondents had first heard about Curriculum Online from someone within the school. For those who had first heard about Curriculum Online from a source outside the school, the most common source was the media.
- The Curriculum Online website had been visited by 80% of school respondents in primary schools and 92% in secondary schools. Nearly half of subject respondents (45% in primary and 46% in secondary schools) had visited the website. Just under a third (31%) of primary school respondents and 43% of secondary school respondents visited the Curriculum Online website at least once a month.
- Almost three-fifths (58%) of school respondents in primary schools and 78% in secondary schools said that they used the Curriculum Online website as a source of information when selecting software. The Curriculum Online website was the main or only source of information used to select software for 4% of primary school respondents and 11% of secondary school respondents. Suppliers' catalogues were the most commonly-used sources of information.
- Ratings of the ease of finding software had not significantly improved since the baseline survey, with the exception of Key Stage 2, where the proportion of subject respondents saying it was easy to find software rose from 68% to 73%. Ratings of the quality of software available for relevant content and technical quality improved between the baseline and second surveys at Key Stages 1, 2 and 3.
- The Curriculum Online website was rated favourably, by the majority of respondents who had used it, for being easy to use and for the information provided about products. Ratings of the website for finding relevant products were slightly lower, with 55% of school respondents in primary schools and 52% in secondary schools saying it was 'very good' or 'quite good'. The survey was conducted prior to the relaunch of the website in December 2003.
- Curriculum Online was expected to have a positive impact ('a lot' or 'a little') on encouraging teachers to use ICT by 61% of school respondents and 60% of subject respondents; 56% of school respondents and 52% of subject respondents expected it to have a positive impact on improving pupil attainment.
- Most subject respondents (81% in primary schools and 87% in secondary schools) had heard of eLearning Credits (eLCs). These were held centrally in most schools with 8% of primary schools and 20% of secondary schools saying that they allocated eLCs between departments.
- The proportion of secondary school respondents who said that departments purchased software independently fell from 46% in the baseline survey to 26% in the second survey. The proportion saying that teachers would submit requests to the headteacher, ICT co-ordinator or other senior staff member increased from 43% to 63%. Two-thirds (67%) of primary school respondents said that teachers submitted requests for software, while 21% said that all software was selected centrally by a senior staff member.
- Fewer than half of schools (46% primary and 45% secondary) provided full details of spending on software for the curriculum. The average total spend in primary schools doubled, from £986 in the baseline survey to £1,972 in the second survey. In secondary

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schools the average spend rose from £6,371 in the baseline to £8,296 in the second survey. The proportion of primary schools who set aside funding for software fell from 62% in the baseline survey to 53% in the second survey; 45% of secondary schools set funding aside, a figure that had not changed significantly since the baseline.

- Satisfaction with the level of funding available for software had increased, with the proportion of primary schools who felt that the amount of funding was 'about right' rising from 27% at the baseline to 57% at the second survey; 39% of secondary schools thought that the amount of funding was about right, compared with 20% in the baseline survey.
- Nearly 70% of school respondents thought that Curriculum Online would have a positive impact on enabling schools to purchase value-for-money software; 58% thought that it would have a positive impact on making the process of purchasing software more efficient.
- ICT resources were being used in lessons more frequently than in the baseline survey. The proportion of primary school subject respondents who used internet-based resources in half or more lessons increased from 10% in the baseline to 14% in the second survey. The proportion using an interactive whiteboard in at least half of lessons increased from 6% to 11%. In secondary schools the proportion of subject respondents using computer packages in half or more lessons rose from 9% to 14%. Subject-specific software applications were used in half or more lessons by 14% of secondary subject respondents, compared with 10% in the baseline survey. The proportion of secondary subject respondents using an interactive whiteboard in at least half of lessons rose from 5% in the baseline to 11% in the second survey.
- The perceived importance of ICT at Key Stages 1 and 2 had increased since the baseline survey. Three-quarters of respondents for maths rated ICT as important at Key Stage 1 while 74% did so for Key Stage 2. Two-thirds of English respondents felt ICT was important at Key Stage 1 and 78% at Key Stage 2. Fewer science respondents rated ICT as important (48% at Key Stage 1 and 62% at Key Stage 2) but these figures had significantly increased since the baseline survey.
- At Key Stage 3 the proportion of subject respondents rating ICT as important had increased significantly for English (62% compared with 50% at the baseline) and geography (71% compared with 60%). At Key Stage 4 the proportion of subject respondents who felt ICT was important to their subject increased for science (79% compared with 68%) and English (62% compared with 51%).
- There was a change in attitudes towards ICT among respondents in primary schools. The proportion of school respondents in primary schools who agreed that *'It is easier to find relevant teaching material in textbooks than on the internet'* fell from 40% in the baseline to 24% in the second survey. The proportion of primary subject respondents agreeing with this statement fell from 56% to 46%. The proportion of school respondents in primary schools who agreed that *'There is a lot of useful material for the curriculum on the internet'* rose from 84% in the baseline to 92%, while the proportion of subject respondents agreeing with this statement rose from 77% to 82%. Attitudes to ICT in secondary schools did not change significantly on the whole between the baseline and second surveys. The proportion of secondary subject respondents who agreed that *'It is easier to find relevant teaching material in textbooks than on the internet'* fell from 56% to 51%. There was a rise in the proportion of subject respondents in secondary schools who agreed that *'Using ICT can help in responding to different pupil abilities'* from 76% to 84%.
- There were increases in the levels of ICT resources in both primary and secondary schools between the baseline survey in autumn 2002 and the second survey in autumn 2003. The average number of desktop computers in primary schools increased from 24 in the baseline survey to 26, while the average number of laptops increased from 4 to 7. The proportion of primary schools with an interactive whiteboard rose from 39% to 56%. In secondary schools the average number of desktop computers increased from 169 in the baseline to 199; 84% of secondary schools had an interactive whiteboard, with an average number of 5 per school. The ratios of the numbers of pupils per computer had improved in both primary and secondary schools since the baseline survey. The average pupil:computer ratios were 8.0:1 in primary schools and 5.1:1 in secondary schools.

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- The proportions of subject respondents in primary schools with access to laptops and interactive whiteboards for teaching had increased significantly since the baseline survey – 14% of primary subject respondents had laptops dedicated for their subject use while 35% had shared access, while 13% had access to a dedicated interactive whiteboard and 36% had shared access to one. There were rises in the proportion of secondary subject respondents with access to dedicated laptops and interactive whiteboards for their subject – 28% of secondary subject respondents had dedicated subject laptops, compared with 19% in the baseline survey, while the proportion with dedicated interactive whiteboards rose from 15% to 24%.
- Satisfaction with the quantity of desktop and laptop computers had improved in primary schools. The proportion of subject respondents who felt there were less desktops available than needed fell from 46% to 40% and the proportion who felt there were fewer laptops than needed fell from 70% to 55%. In secondary schools, the proportion of school respondents who thought the school had fewer desktop computers than needed fell from 66% in the baseline to 56%, while the proportion who felt that there were fewer laptops than needed fell from 77% to 67%. The proportion of subject respondents who felt that the school had fewer laptops than needed also fell, from 75% to 67%.
- The proportion of primary schools with broadband internet access had more than doubled, from 22% at the baseline survey in autumn 2002 to 47% in autumn 2003. The proportion of secondary schools with broadband had also risen from 84% to 90%. Satisfaction with the speed of the school's internet connection rose significantly in primary schools, with 47% of subject respondents saying it was fast enough for all or most requirements, compared to 33% in the baseline survey.

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1 Introduction

1.1 Background

Curriculum Online has been developed as part of the Government's drive to encourage the use of ICT to help improve standards in schools. A programme of investment in ICT infrastructure in schools was launched in 1998 through the National Grid for Learning (NGfL) programme. In 2003 the Government set out in the paper *Fulfilling the Potential: Transforming Teaching and Learning Through ICT in Schools*¹ the way forward for schools to advance the development of e-learning and the contribution that using ICT could make to the school reform agenda.

Curriculum Online is intended to provide access to a wide range of digital material to support teaching and learning across the curriculum. A dedicated website was launched in January 2003 where teachers can search for digital material, from accredited suppliers, that meets their specific requirements. Funding has been released to schools in the form of eLearning Credits (eLCs) which can only be used to purchase digital materials from accredited Curriculum Online suppliers. The first tranche of funding was released in autumn 2002 and £100 million has been set aside for each of the academic years between 2003 and 2006.

The Department for Education and Skills (DfES) contracted the National Centre for Social Research (NatCen) and the University of Bristol in 2002 to conduct a four-year evaluation of Curriculum Online, in order to assess:

- the educational impact of Curriculum Online in schools
- the operational effectiveness of the programme
- the impact that it has on the industry (that is, suppliers of educational materials).

The educational impact of Curriculum Online is being measured through a series of surveys, supported by qualitative work, in schools. This report contains the findings of the second school survey, conducted between October and December 2003.

1.2 Survey aims

This programme of research aims to measure the impact of Curriculum Online within schools. It will examine whether the existence of Curriculum Online leads to changes across the curriculum, and how teachers use the resources available. The research aims to explore the impact that Curriculum Online has, over time, on teaching and learning styles (for example in encouraging individualised learning), and on pupil motivation and attainment. The programme of research also aims to identify any barriers to the success of Curriculum Online.

The first school survey was conducted in winter 2002, prior to the full launch of the Curriculum Online website. The purpose of this survey was to collect baseline data on the ICT resources schools had and how teachers were using these resources, before Curriculum Online had made an impact. The findings of the baseline survey were published by Becta in September 2003. The second school survey was designed to examine the impact that Curriculum Online has had in schools, collecting data that can be compared with the baseline data to identify any changes that have taken place in the use of ICT resources or in teachers' attitudes towards ICT. A third and final survey will be conducted in autumn 2005 to provide evidence of the impact of Curriculum Online over a longer period of time.

1.3 Overview of methodology

The survey was conducted in maintained primary and secondary schools in England. The sample consisted of schools that had participated in the baseline survey. Interviewers from NatCen's field force visited selected schools to distribute self-completion questionnaires. In each school one questionnaire collected school-level information on the resources available, while additional questionnaires (three for primary schools, six for secondary schools) collected data for selected subject areas. It is important to note that the sampled units within schools were subjects rather than individuals. While it is likely that in the majority of cases the same individual will have completed questionnaires in the baseline and follow-up survey, this was not necessarily always the case.

A detailed account of the methodology for this study can be found in Appendix A of this report.

¹ *Fulfilling the Potential* (DfES 2003, <http://dfes.gov.uk/ictinschools>).

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1.4 Interpreting tables

The bases stated in this report are unweighted but percentages are shown weighted (see Appendix A for a description of the weighting). Except where indicated, percentage figures shown in the tables in this report should be read vertically. For example, in Table 1.1, the first percentage figure shown (73%) is based on the population group indicated above it, that is, primary schools. This result can be read as '73% of primary school respondents were ICT co-ordinators'. Due to rounding, percentage figures may not add up exactly to 100% but may total between 98% and 102%.

It is important to note the unweighted bases at the foot of the tables when drawing comparisons. The table below gives an indication of the confidence intervals to apply to different percentage results for different sample sizes within this report. These 95% confidence levels are the levels within which we can be 95% confident that the true answer will lie (in other words, there is only a one in 20 chance that the true answer will lie outside this range).

Sample size	Confidence limits or accuracy of results		
	10% or 90% +/-	30% or 70% +/-	50% +/-
50	8	13	14
100	6	9	10
250	4	6	6
500	3	4	4
1 000	2	3	3
2 000	1	2	2

To take an example from the table, for a percentage result of 50% on a sample of 500, there is a 95% chance that the true result will lie within $\pm 4\%$, that is, between 46% and 54%. (These confidence limits assume a simple random sample and no adjustment has been made for the effects of clustering. Such an adjustment would increase the confidence limits slightly.)

The following symbols have been used in the tables in this report:

- [] to indicate a percentage or mean based on fewer than 50 respondents
- * to indicate a percentage value of less than 0.5%
- to indicate a percentage value of zero.

1.5 Respondent characteristics

A description of the characteristics of schools participating in the survey is given in Appendix A.

The roles of respondents completing the primary and secondary school questionnaires are shown in Table 1.1. Almost three-quarters (73%) of primary school respondents were ICT co-ordinators, while in 14% of primary schools the headteacher completed the questionnaire. ICT co-ordinators completed the school questionnaire in 43% of secondary schools and a head of ICT did so in 38%.

Table 1.1: Role of school respondent

Role	Primary schools %	Secondary schools %
ICT co-ordinator	73	43
Head of ICT	4	38
Head teacher	14	2
Deputy head teacher	1	3
Teacher	2	1
System/network manager		2
Technician/manager		1
Other	5	6
Not answered	2	4
Base: All schools	261	247

Table 1.2 shows the roles of respondents to the subject questionnaires. In secondary schools, most (81%) of the respondents to the subject questionnaires were department heads and 11% were subject co-ordinators. In primary schools, 83% of subject respondents were subject co-ordinators. Findings in this report relating to 'teachers' thus refer to mostly senior staff and should not be taken to be representative of all teachers.

Table 1.2: Role of subject respondent

Role	Primary teachers %	Secondary teachers %
Subject co-ordinator	83	11
Department head	6	81
Head teacher	2	
Deputy head teacher	1	
Subject teacher		6
Class teacher	1	
Other	6	*
Not answered	1	1
Base: All schools	733	1212

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As might be expected, most secondary teachers (89%) taught both Key Stages 3 and 4, while only 7% of primary teachers taught both Key Stages 1 and 2.

1.6 Structure of this report

Chapter 2 examines the impact of the Curriculum Online website, looking at the extent to which it is being used by schools and whether it is helping teachers to find appropriate software. The impact of Curriculum Online funding, in the form of eLCs, on software spending and purchasing processes is discussed in Chapter 3. Chapter 4 analyses teachers' usage of ICT and their attitudes towards ICT to assess whether Curriculum Online has impacted on these. Chapter 5 examines the ICT resources that schools have and any changes in resources since the baseline survey. Chapter 6 looks at the relationship between indicators of adopting Curriculum Online and the impact on teaching and learning in schools. The findings of the report are brought together to draw conclusions and recommendations for the further development of Curriculum Online in Chapter 7.

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2 Curriculum Online website

This chapter assesses the impact of the Curriculum Online website on schools. It begins by examining awareness of the website among teachers and the extent to which schools and teachers are making use of it. It assesses the impact that Curriculum Online has had on helping teachers to find appropriate software easily and concludes by discussing teachers' views of the website. Most questionnaires for the second survey would have been completed prior to the relaunch of the Curriculum Online website in December 2003.

2.1 Awareness and knowledge of Curriculum Online

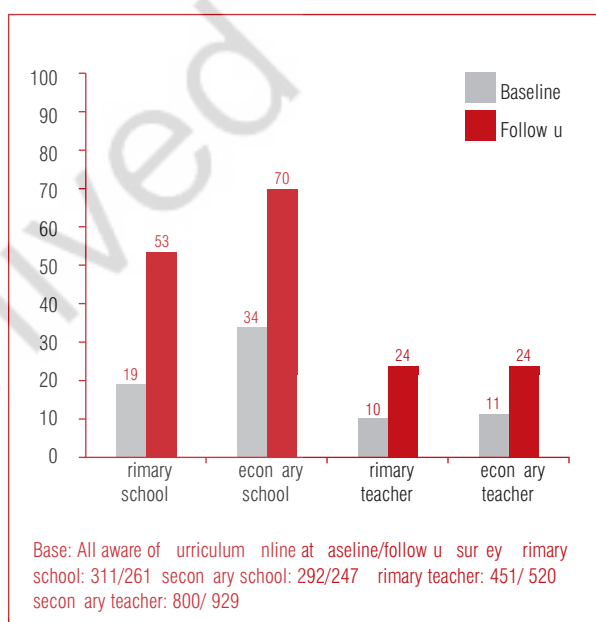
Awareness of Curriculum Online rose significantly between the baseline survey in the autumn term of 2002 and the second survey in autumn 2003. Over three-quarters (77%) of secondary teachers and a similar proportion of primary teachers (74%) stated that they were aware of Curriculum Online in the second survey, compared with under half of each group in the baseline survey (46% and 45% respectively). No prompts or definitions of what Curriculum Online was were given in the question. This rise in awareness is an expected trend since the baseline survey was conducted at a very early stage in the development of Curriculum Online.

Despite the overall increase in awareness, most teachers still felt that their knowledge of Curriculum Online was limited, with just 2% of primary and secondary teachers claiming to know 'a lot' about Curriculum Online and 22% 'a fair amount' (Figure 1). Although this was an increase from the baseline when 10% of primary teachers and 11% of secondary teachers knew 'a lot' or 'a fair amount', these rises are arguably not as great as might have been expected, given that the Curriculum Online website has been operating since January 2003.

Awareness of Curriculum Online among secondary teachers varied according to subject, with respondents for science and maths the most likely to be aware of it (87% and 83% respectively) and respondents for music and English the least likely to have heard of it (71% and 73%). However, respondents for music and English who had heard of Curriculum Online were more likely than respondents for other subjects to feel they knew a reasonable amount about it: 31% of English respondents and 27% of music respondents who had heard of Curriculum Online claimed to know 'a lot' or 'a fair amount' about it, compared with just 18% of maths respondents.

The level of knowledge that school respondents felt they had about Curriculum Online had increased significantly since the baseline (Figure 1). Secondary school respondents were the most confident in their knowledge, with 16% claiming to know 'a lot' about Curriculum Online and more than half (54%) 'a fair amount'. The perceived knowledge of primary school respondents was lower, with nearly half (47%) stating they knew only 'a little'.

Figure 1: Knowledge of Curriculum Online: % of respondents who knew a lot or a fair amount about Curriculum Online at the baseline and follow-up surveys



The majority of teachers had first heard about Curriculum Online from a source within the school. Nearly two-thirds (64%) of subject respondents in primary schools had first heard about it from someone in the school (Table 2.1). The most common source was the ICT co-ordinator (42%) while 10% had heard about it from the headteacher. Just over half (52%) of secondary subject respondents had first heard about Curriculum Online from someone within the school, most often the ICT co-ordinator (26%) or someone else (22%).

For teachers who had been made aware of Curriculum Online from a source outside the school, the most common source was the media. Nearly a quarter (23%) of primary subject respondents and nearly two-fifths (37%) of secondary subject respondents said they had first heard of Curriculum Online from a newspaper or other form of media.

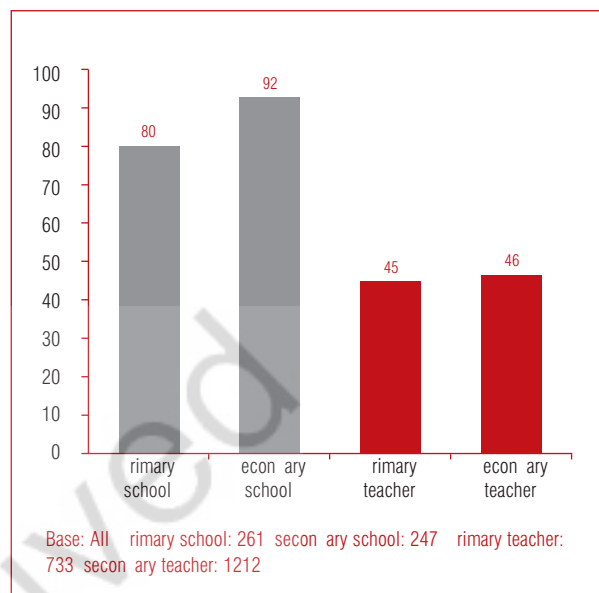
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Table 2.1: How teachers first heard about Curriculum Online

	Primary teachers %	Secondary teachers %
From the head teacher	10	4
From the coordinator	42	26
From someone else in the school	12	22
From news a er or other media	23	37
From A	3	1
From numeracy/literacy consultants	2	*
n the internet	1	2
through training/courses	1	1
ome other way	3	4
Not answered	3	3
Base: All teachers aware of curriculum online	520	929

Figure 2: Proportion of school and subject respondents who have ever visited the Curriculum Online website



2.2 Visiting the website

The Curriculum Online website has achieved a high level of penetration among respondents with responsibility for ICT in schools. Nearly all (92%) secondary school respondents and four in five (80%) primary school respondents had visited the website (Figure 2). The majority of the subject respondents aware of Curriculum Online (59% of secondary teachers and 60% of primary teachers) had visited the website. This means that, overall, 45% of subject respondents in primary schools and 46% in secondary schools had visited the Curriculum Online website on one or more occasions.

Secondary school respondents were more likely than those in primary schools to have visited the website in the current term (autumn 2003), with 59% of secondary school respondents who had visited the website stating their most recent visit was in the current term, compared with 47% of primary school respondents. Around a third of school respondents who had visited the site (34% in primary schools, 31% in secondary schools) had last done so in the summer term of 2003. Just over half of the subject respondents who had visited the site (52% primary, 53% secondary) had most recently accessed it in the current term (autumn 2003), while around a third (31% of primary teachers and 33% of secondary teachers) had most recently visited it in the previous term (summer 2003).

While the proportion of school respondents who had visited the Curriculum Online website was relatively high, the majority did not visit the site frequently (Table 2.2). Just under half (48%) of secondary school respondents who had visited the website did so once a month or more often, while in primary schools 38% visited the site this frequently. Nearly a fifth (18%) of primary school respondents who had visited the site had done so only once.

In primary schools, the proportion of subject respondents visiting the site more often than once a month was the same as for school respondents (11%). In secondary schools, the proportion of subject respondents visiting the website frequently was lower than for school

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respondents. Just over a fifth (22%) visited the site about once a month, while 7% visited more often than this. A quarter of primary and secondary teachers who had visited the Curriculum Online website had done so on only one occasion.

Table 2.2: Frequency of visits to Curriculum Online website

	Primary school (%)	Secondary school (%)	Primary teacher (%)	Secondary teacher (%)
More often than once a month	11	17	11	7
About once a month	27	31	21	22
Less often than once a month	43	44	44	46
Only visit once	18	8	25	25
Base: All who have visited the site	206	223	300	558

Table 2.3 shows the proportions of all school and subject respondents in primary and secondary schools who were: frequent visitors to the Curriculum Online website (defined as visiting at least once a month); occasional visitors (visited at least once but less than once a month); non-visitors; and those who were not aware of Curriculum Online. Nearly a third (31%) of all primary school respondents and more than two-fifths (43%) of secondary school respondents were frequent visitors to the website. A smaller proportion of subject respondents frequently visited the site, with 14% of primary teachers and 13% of secondary teachers visiting once a month or more often. Around a third of primary and secondary teachers (30% and 32% respectively) were 'occasional visitors', that is, they had visited the site at least once but did so less often than once a month.

Table 2.3: Usage of Curriculum Online website

	Primary school (%)	Secondary school (%)	Primary teacher (%)	Secondary teacher (%)
Frequent visitors	31	43	14	13
Occasional visitors	49	46	30	32
Non-visitors	20	8	29	32
Not aware of Curriculum Online			26	23
Not answered	1	3		
Base: All	261	247	733	1212

Larger secondary schools were more likely than smaller schools to be making frequent use of the Curriculum Online website. Just over half (51%) of school respondents in schools with 1,200 or more pupils visited the website at least once a month. In schools of less

than 800 pupils only a third (34%) of school respondents visited the website at least once a month. Subject respondents in smaller secondary schools were less likely to have ever visited the Curriculum Online website. Just under two-fifths (39%) of subject respondents in schools with fewer than 800 pupils had ever visited the website, compared with more than half (51%) in schools with 1,200 or more pupils. This may possibly be because larger amounts of eLCs have been received by larger schools, as the funding is partly calculated on a per pupil basis, and this could have generated more interest in the Curriculum Online programme.

Among secondary teachers, modern languages respondents were less likely than respondents for other subjects to visit the Curriculum Online website frequently, with just 8% accessing the site once a month or more often (Figure 3). Respondents for the subjects with the highest awareness of Curriculum Online, maths and science, were no more likely than those in other subjects to access the website frequently.

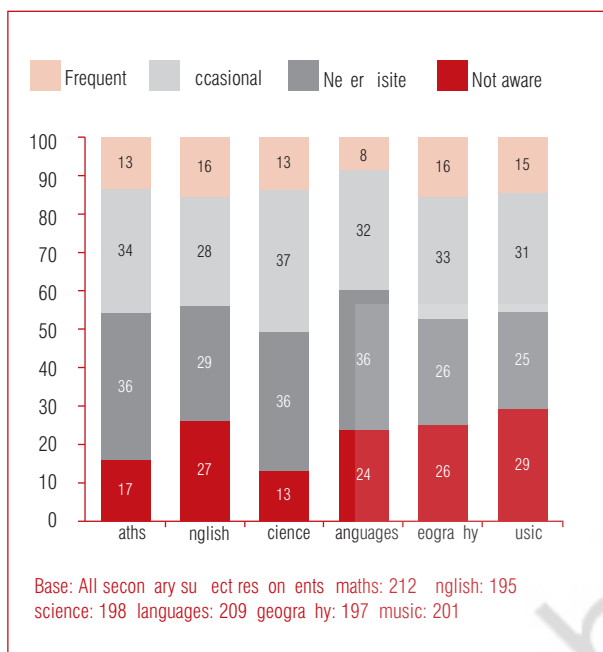
The level of ICT resources in secondary schools was also related to the frequency of visits subject respondents made to the website. In schools in the tertile with the lowest numbers of pupils per computer, 19% of teachers could be defined as frequent visitors to the website, compared with 12% in the tertile with the highest numbers of pupils to each computer. The level of resources in schools was not, however, related to whether teachers had ever visited the website.

In primary schools there was a correlation between subject respondents visiting the website and the school respondent doing so. Nearly three-fifths (59%) of primary teachers with a school respondent who visited the site frequently had themselves accessed the website, compared with a third (33%) of teachers whose school respondent had never used the website. Primary teachers with a school respondent who had never visited the site were twice as likely to have not heard of Curriculum Online than those whose subject respondent visited the site frequently (32% compared with 16%). This indicates that information and encouragement from the person responsible for ICT in the school could play an important part in teachers' awareness of Curriculum Online and usage of the website.

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Figure 3: Secondary subject respondent visits to Curriculum Online website



2.3 Using the website to access software

The majority of school respondents who had visited the Curriculum Online website had searched the catalogue of resources to purchase products. More than half of primary school respondents (55%) and over two-thirds of secondary school respondents (70%) who had visited the site had searched for software to purchase (Table 2.4). This translates to 44% of all school respondents in primary schools and 62% in secondary schools. In addition, around a third of school respondents who visited the Curriculum Online website (30% in primary schools, 35% in secondary schools) had used the site to access software that could be downloaded free of charge.

Subject respondents who visited the Curriculum Online website were less likely to use the site to access software. A quarter (26%) of primary teachers and less than half (45%) of secondary teachers who had visited the site had searched for software to purchase. This translates to 12% of all subject respondents in primary schools and 20% in secondary schools. Subject respondents might be expected to be less likely to use the Curriculum Online website to find software to purchase as they would be less likely to have control over the eLCs. Primary teachers, unlike secondary teachers, were more likely to have used the site to access free material to download (36% did this).

Table 2.4: Using the website to access software

	Primary school (%)	Secondary school (%)	Primary teacher (%)	Secondary teacher (%)
Used the website to search for products to purchase	55	70	26	45
Used the website to download free material	30	35	36	29
Base: All who visited curriculum online website:	206	223	300	558

Secondary school respondents in smaller schools were less likely to have used the Curriculum Online website to search for software to purchase, with 57% of respondents in schools of fewer than 800 pupils using the site in this way, compared with 74% of those in schools of 1,200 or more pupils. The same was true of secondary teachers with 37% of those in the smallest schools using the website to search for software, compared with 52% in the largest schools.

There were some differences by subject in the use that secondary teachers made of the Curriculum Online website, possibly reflecting the kinds of material available for different subjects or differences in the needs of each subject. Respondents for maths were the most likely to use the website to search for products to purchase but were the least likely to access material to download free of charge. Geography respondents, conversely, were the least likely to search for products to purchase but the most likely to access material to download for free.

Primary subject respondent usage of the Curriculum Online website, as well as their likelihood of visiting the site, was correlated to school respondent usage of the website. Primary teachers whose school respondent had searched for software on the site were more likely to have used the site themselves to search for products to purchase. In secondary schools there was no correlation between school respondents using the website and subject respondents doing so.

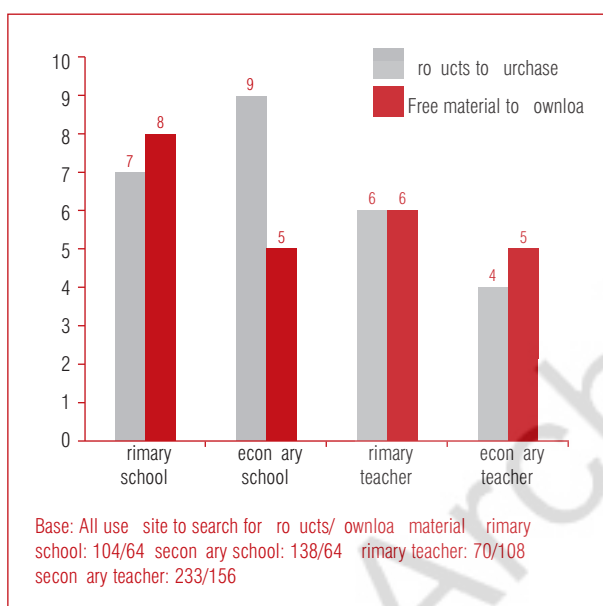
Secondary school respondents made the most frequent use of the Curriculum Online website to search for software to purchase, having made an average of 9 searches in total (Figure 4). Primary school respondents had made slightly fewer searches for products to purchase, with a mean of 7 searches, but used the site on average more often to download free material, having done so on an average of 8 occasions. School respondents in secondary schools with lower numbers of

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pupils per computer tended to have used the website more often to find products for purchase. Respondents in the tertile of schools with the lowest numbers of pupils per computer had made an average of 13 searches, while those in the tertile with the highest numbers had searched for products on 7 occasions on average.

Figure 4: Average number of times searched for products to purchase and accessed free material to download through Curriculum Online website



2.4 Impact of website on process of finding software

2.4.1 Sources of information for finding software

The Curriculum Online website has become established as a source of information used by schools to find software, although it has yet to become the preferred source of information for most schools (Table 2.5). Nearly three-fifths of primary school respondents (58%) said they used Curriculum Online as a source of information when selecting software. Most primary school respondents used suppliers' catalogues (91%), recommendations from contacts outside school (89%) and recommendations from colleagues (79%) when finding out about software. Catalogues and recommendations appeared to be preferred to web-based sources of information. More primary school respondents used the Curriculum Online website than suppliers' own websites. Almost four-fifths (78%) of secondary school respondents said that they used the Curriculum Online website as a source of information for selecting software. Other sources commonly used by

secondary school respondents were suppliers' catalogues (93%) and recommendations from contacts outside the school (83%).

Primary and secondary subject respondents were less likely to use the Curriculum Online website as a source of information for selecting software (Table 2.5). Less than a third (30%) of primary teachers said that they used the Curriculum Online website as a source of information while more common sources were suppliers' catalogues (78%), contacts outside the school (70%) and recommendations from colleagues (67%). Fewer than two-fifths (37%) of secondary teachers used the website while 86% used suppliers' catalogues and 69% recommendations from contacts outside the school. There appeared to be some confusion among a minority of teachers, with 10% of secondary teachers and 12% of primary teachers who said that the Curriculum Online website was a source of information they used later stating that they had not heard of Curriculum Online.

There were some differences in the sources of information used by secondary teachers depending on the subject taught (Figure 5). The Curriculum Online website was less likely to be cited as a source of information by respondents for modern languages (32%) and music (33%) than other subjects. Respondents for maths were the most likely to use recommendations from contacts outside the school (83%) while geography respondents were the least likely to do so (57%).

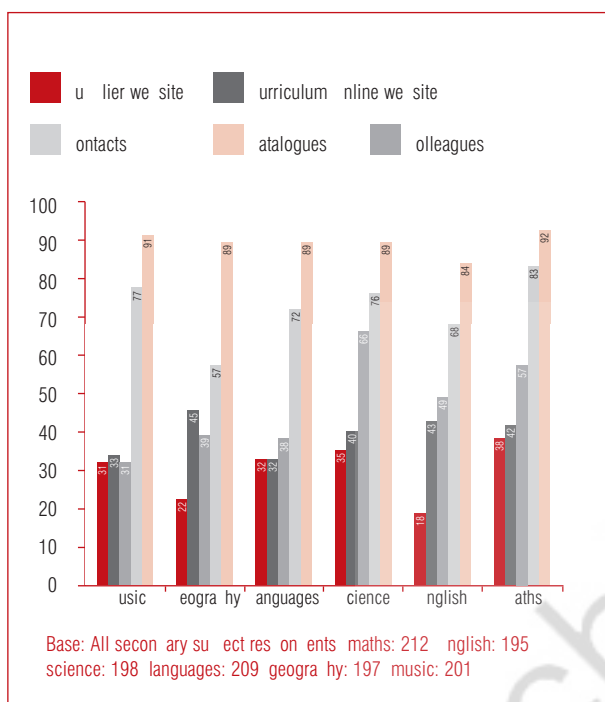
Table 2.5: Sources of information used when selecting software

	Primary school (%)	Secondary school (%)	Primary teacher (%)	Secondary teacher (%)
Curriculum online website	58	78	30	37
Suppliers' catalogues	91	93	78	86
Suppliers' websites	44	73	16	28
Website	8	12	2	1
Recommendations from colleagues	79	76	67	45
Recommendations from contacts outside the school	89	83	70	69
Bibliography	3	3		
Other source	5	6	2	1
Not answered	1	2	1	1
Not applicable to select software			12	3
Base: All	261	247	733	1212

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Figure 5: Secondary teacher sources of information for selecting software by subject



Although the majority of school respondents had used the Curriculum Online website, only a small proportion (4% primary and 11% secondary) stated that this was the source of information they used most frequently (Table 2.6). Suppliers' catalogues were cited as the most used source of information by 43% of primary school respondents and 36% of secondary school respondents. The popularity of suppliers' catalogues did not, however, mean that schools tended to restrict their choice of software to a few trusted suppliers, as the majority (74% in primary schools and 78% in secondary schools) said that they were more likely to compare products across a range of suppliers when selecting software. This might imply that the Curriculum Online website is not yet seen to be as useful as paper catalogues for reference purposes when comparing software.

The Curriculum Online website was the most frequently used or only source of information for only 2% of primary teachers and 4% of secondary teachers (Table 2.6). Suppliers' catalogues were the most frequently used or only source for almost two-fifths (39%) of primary teachers and nearly half (48%) of secondary teachers. The majority of teachers did not rely just on one or two suppliers, with 73% in primary schools and 67% in secondary schools stating that they compared

products across a range of suppliers when selecting software to purchase.

The level of ICT resources in the school was related to the sources of information used by secondary teachers. The proportion citing Curriculum Online as the main or only source of information rose to 9% among teachers in schools with lower numbers of pupils to each computer. Teachers in schools with a high number of pupils to each computer were more reliant on catalogues with 65% of teachers choosing these as the main source of information, compared with 54% in schools with low numbers of pupils to each computer.

Table 2.6: Most used or only source of information for selecting software

	Primary school (%)	Secondary school (%)	Primary teacher (%)	Secondary teacher (%)
Curriculum Online website	4	11	2	4
Suppliers' catalogues	43	36	39	48
Suppliers' websites	3	8	1	3
Other sources	1		*	
Recommendations from colleagues	6	9	9	8
Recommendations from contacts outside the school	26	16	18	19
Behavioural	*	2		
Other source	2	1	1	1
Not answered / not applicable	14	18	31	18
Base: All	261	247	733	1212

2.4.2 Ease of finding relevant software

Curriculum Online does not appear to have had a substantial impact overall on how easy teachers feel it is to find relevant software for curriculum use. As Table 2.7 shows, ratings of ease of finding relevant software by school respondents and teachers have not significantly increased since the baseline. The exception was at Key Stage 2 where there has been a significant increase in the proportion of primary subject respondents rating finding relevant software as 'very' or 'quite' easy, rising from 68% to 73%. There was a small rise in the proportion of primary school respondents rating software as easy to find, from 65% to 72%, but this was not statistically significant.

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Table 2.7: Ease of finding relevant software

	Primary school	Teacher KS1	Teacher KS2	Secondary school	Teacher KS3	Teacher KS4
very easy	7	12	11	7	19	19
<i>Change baseline</i>	<i>+1</i>	<i>0</i>	<i>-1</i>	<i>+1</i>	<i>-1</i>	<i>-1</i>
very/quite easy	72	68	73	68	77	72
<i>Change baseline</i>	<i>+</i>	<i>+</i>	<i>+</i> *	<i>+</i>	<i>+2</i>	<i>0</i>
Base: All answering	260	567	634	238	1196	1132

* = statistically significant change

Frequently visiting the Curriculum Online website was strongly associated with finding it easy to locate relevant software. Among secondary teachers who visited the website frequently, 31% rated finding software as 'very easy' at Key Stage 3, while just 12% of teachers who had not heard of Curriculum Online gave this rating. At Key Stage 4, 27% of teachers who frequently visited the site rated finding software as 'very easy'. It does not seem that secondary teachers are more likely to find it easy to locate relevant software because they use Curriculum Online, rather than those teachers who already found it easy to locate software have become Curriculum Online users. Analysis of secondary teachers' ease of finding software at the baseline by use of the Curriculum Online website in the follow-up survey, reveals that at the baseline respondents who now visit the Curriculum Online website regularly were more likely to find it 'very easy' to locate relevant software at Key Stage 3. As not all subject respondents at the baseline and follow-up will be the same individuals, this finding can only be taken as indicative, but it would suggest that 'early adopters' of Curriculum Online have been teachers who were already confident at finding software.

A slightly different story emerges in primary schools, where teachers who frequently visited the Curriculum Online website were also more likely to rate finding relevant software as 'very easy'. At Key Stage 2, 20% of teachers frequently visiting the website rated finding software as 'very easy'. At the baseline those who are now frequent visitors to the website (although not all will have been the same individuals) were not significantly more likely to think locating relevant software was easy, suggesting that using Curriculum Online has had an impact on the ease with which they can now locate relevant software.

In secondary schools the subject taught was also related to how easy teachers felt it was to find relevant software. At Key Stage 3, ratings of 'very easy' were most likely to be given by respondents for music (27%) and maths (24%). Respondents for English and geography were the least likely to rate finding software as 'very easy' with only 11% doing so. At Key Stage 4, music (31%) and science (26%) teachers were most likely to rate finding software as 'very easy'. Again, only 11% of English and geography respondents said that finding relevant software was 'very easy'.

At Key Stage 3 there was also an association between the rating of ease and the level of ICT resources. Almost a quarter (24%) of teachers in schools with lower numbers of pupils per computer found it 'very easy' to locate relevant software compared with 14% in schools with the highest numbers of pupils per computer.

Regression analysis helps to assess the relative strength of relationships to key variables. A logistic regression using 'ease of finding relevant software at Key Stage 3' reveals that:

- The association between number of pupils per computer and ease of finding relevant software is comparatively weak (increasing the number of pupils per computer slightly increases the likelihood that teachers find it difficult to locate relevant software).
- There is a strong negative association between frequent visits to the Curriculum Online website and difficulty finding relevant software (in other words, frequent visitors were less likely to say it was difficult to find software).
- The associations between subjects taught were also significant, with maths having the strongest negative association with finding it difficult to locate relevant software (that is, they were least likely to report difficulty).

As most of the questionnaires for the survey were completed before the search tools on the website were revised in December 2003, these findings relate to the earlier version of the site.

2.4.3 Quality of software

There have been improvements in the ratings of curriculum-related software for relevant content and technical quality, which can in part be attributed to the impact of Curriculum Online in helping teachers to locate

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relevant software. Teachers' ratings of software available in their subject for technical quality and relevant content have improved at Key Stages 1, 2 and 3 since the baseline survey (Table 2.8).

Table 2.8: Teacher ratings of software for relevant content and technical quality

	Teacher KS1 (%)	Teacher KS2 (%)	Teacher KS3 (%)	Teacher KS4 (%)
relevant content: very good	11	11	17	16
<i>Change since baseline</i>	<i>+</i>	<i>+</i> *	<i>+2</i>	<i>-1</i>
relevant content: very good / good	78	81	82	76
<i>Change since baseline</i>	<i>+7*</i>	<i>+8*</i>	<i>+</i> *	<i>0</i>
technical quality: very good	11	8	14	13
<i>Change since baseline</i>	<i>+2</i>	<i>+1</i>	<i>+1</i>	<i>-1</i>
technical quality: very good / good	82	83	85	82
<i>Change since baseline</i>	<i>+6*</i>	<i>+</i> *	<i>+</i> *	<i>+1</i>
Base: All answering relevant content/technical quality	564/552	632/620	1172/1157	1108/1090

* = statistically significant change

At Key Stage 3, teachers who visited the Curriculum Online website frequently were more likely to rate software as 'very good' for relevant content (27%) and technical quality (20%). In the baseline survey, teachers who now frequently visited the site were not significantly more likely to rate software more highly, and although respondents will not be the same individuals in all cases, this would suggest that the difference may be an effect of using Curriculum Online.

Higher ratings of software by frequent visitors to the Curriculum Online website were also seen at Key Stage 2. Teachers who visited the site once a month or more were more likely to rate software in their subject as 'very good', both for relevant content (20%) and technical quality (13%). These teachers did not give significantly higher ratings in the baseline survey, again indicating that this difference may be attributable to use of Curriculum Online.

As in the baseline survey, science respondents were less likely to rate software highly for relevant content or technical quality, particularly at Key Stage 1. Maths respondents were the most likely to rate software as 'very good' for relevant content at Key Stage 2 with 14% doing so, a figure that was unchanged from the baseline survey.

At Key Stage 3, respondents for modern languages and music were the most likely to rate available software as 'very good' for relevant content (24% and 23%

respectively). At Key Stage 4, music respondents were, as noted in the baseline survey, more likely than other respondents to rate software highly for relevant content, with 34% rating it as 'very good'. As in the baseline survey, respondents for English were less likely than other subjects to rate software highly for relevant content or technical quality.

There was also a significant increase in the proportion of school respondents rating software fitness for purpose as 'very good' or 'good'. More than nine in 10 (91%) primary school respondents rated the software available as 'very good' or 'good', an increase of six percentage points since the baseline survey. An increase of 11 points was seen in secondary schools with 89% of school respondents rating software as 'very good' or 'good'. In secondary schools, this increase was not related to use of the Curriculum Online website, but in primary schools, 20% of frequent visitors to the site rated software fitness for purpose as 'very good', compared to just 4% of those who never used the site. The frequent visitors (although respondents were not all necessarily the same individuals) were not more likely to rate software more highly at the baseline survey, suggesting that the increase may have been related to use of the Curriculum Online website.

2.5 Views on Curriculum Online website

Questionnaires for the follow-up survey were mostly completed in the autumn term of 2003, with the final few returned by post in early January 2004. The Curriculum Online website underwent significant changes during this period, with a redesigned website launched on 17 December 2003. Therefore, most of the views expressed about the website in the survey related to the earlier version of the site.

2.5.1 Ratings of website and suggested improvements

The Curriculum Online website was rated well by the majority of respondents who had visited the site for being easy to use and for the information provided about products (Tables 2.9 and 2.10). Ratings of the website for finding relevant products were slightly less high, but still more than half of respondents who had visited the site felt it was 'quite good' or 'very good' in this respect (Table 2.11). However, only a small proportion of respondents chose the 'very good' options for each aspect of the website, indicating that views were only moderately favourable.

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Table 2.9: Rating of Curriculum Online website for being easy to use

	Primary school (%)	Secondary school (%)	Primary teacher (%)	Secondary teacher (%)
Very good	5	5	5	9
Quite good	63	56	71	63
Not very good	15	19	9	9
Not at all good	8	14	4	3
Don't say	9	6	11	15
Base: All who visited the site	206	223	300	558

Table 2.10: Rating of Curriculum Online website for information provided about products

	Primary school (%)	Secondary school (%)	Primary teacher (%)	Secondary teacher (%)
Very good	4	4	3	3
Quite good	56	60	55	57
Not very good	16	23	10	14
Not at all good	4	7	2	3
Don't say/not answered	20	7	29	22
Base: All who visited the site	206	223	300	558

Table 2.11: Rating of Curriculum Online website for finding relevant products

	Primary school (%)	Secondary school (%)	Primary teacher (%)	Secondary teacher (%)
Very good	3	4	2	5
Quite good	52	48	50	51
Not very good	22	26	15	17
Not at all good	8	14	4	5
Don't say/not answered	16	7	29	22
Base: All who visited the site	206	223	300	558

Ratings of the site for finding relevant products were very similar in primary and secondary schools, with 55% of primary school respondents and 52% of secondary school respondents rating it as 'very' or 'quite' good, indicating that there was not a disparity in the relevance of products available at primary and secondary level. Similarly, there were no significant differences in the ratings given by respondents for different subjects at primary or secondary level. The ratings given may therefore have been influenced more by the experience of searching for products on the Curriculum Online website than by the quality of products available.

The suggestions made for improvements to Curriculum Online that relate to the website were also concerned with the process of finding products rather than with what was available. Only around a quarter of school respondents in primary schools and around a third in secondary schools made any suggestions for improving Curriculum Online. The most common suggestions from primary and secondary school respondents were:

- searching should be less time-consuming (10% of secondary and 9% of primary school respondents)
- it should be easier to find a specific type of product (8% of secondary and 9% of primary school respondents)
- it would be useful to narrow down searches by subject or curriculum area (7% secondary)
- searches should produce fewer or more relevant results (6% of secondary and 5% of primary school respondents)
- there should be more product reviews or guidance (6% of secondary and 5% of primary school respondents).

Even fewer of the subject respondents aware of Curriculum Online made any suggestions for improvements. Suggestions made were similar to those made by school respondents. The most common suggestions from primary and secondary teachers (all made by 2% of those aware of Curriculum Online) were:

- searches should be less time-consuming
- searches should produce fewer results
- more publicity of Curriculum Online to teachers
- it should be easier to find a specific type of product
- more training for teachers to use the site should be provided.

The suggestions made for improving the Curriculum Online website echo the findings of the operational effectiveness evaluation of the site carried out by the University of Bristol (not published) and may have been addressed by the redesign of the website in December 2003.

Frequent visitors to the Curriculum Online website tended to give higher ratings than those who visited less often. Among secondary teachers, a quarter of those who visited the site less often than once a month rated the

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site as 'not very' or 'not at all' good for finding relevant products compared with 16% of those visiting the site once a month or more. Two-fifths (40%) of secondary school respondents who were occasional visitors to the website rated it as 'not very' or 'not at all' good for finding relevant products, compared with 29% of those who were frequent visitors. This may indicate that teachers dissatisfied with the results of their searches are less likely to return regularly to the website.

2.5.2 Expectations of Curriculum Online relating to website

School respondent expectations of what Curriculum Online will achieve have not become more positive since the baseline, although more respondents were able to give a definite view (Table 2.12). The proportion of school respondents who thought that Curriculum Online would impact 'a lot' or 'a little' on encouraging teachers' use of ICT, improving pupil attainment and helping teachers to plan effective lessons more quickly has not changed significantly since the baseline. However, the proportion expecting Curriculum Online to have 'a lot' of impact on encouraging teacher use of ICT has decreased from 25% to 18% and the proportion expecting it to impact 'a lot' on improving pupil attainment has decreased from 18% to 12%. This would indicate that experience of Curriculum Online has perhaps made expectations of its future potential more realistic.

Subject respondents were also more likely to be able to state definite expectations than in the baseline survey, but, unlike with the school respondents, this has led to an increase in positive expectations. The proportion of teachers who expected Curriculum Online to encourage teachers to use ICT 'a lot' or 'a little' has increased from 49% to 60%, while the proportion expecting it to impact 'a lot' or 'a little' on improving pupil attainment has increased from 43% to 52% (Table 2.13).

Frequent visitors to the Curriculum Online website were more likely to have high expectations of what it could achieve. More than a quarter (28%) of secondary teachers and primary teachers who visited the website once a month or more expected Curriculum Online to encourage teachers to use ICT 'a lot'. Around a fifth of teachers who frequently visited the site (19% of secondary teachers and 18% of primary teachers) expected it to have 'a lot' of impact on pupil attainment. Similarly, the proportion of secondary school respondents who expected Curriculum Online to

encourage teachers to use ICT 'a lot' rose to 28% among those who visited the website at least once a month.

Table 2.12: School respondents' expectations of Curriculum Online

	A lot %	A little %	Not at all %	Can't say/Not answered %
encourage teachers use of ICT	18	43	16	23
improve pupil attainment	12	44	16	28
enable teachers to plan lessons more quickly	11	36	22	31

Base: All schools 508

Table 2.13: Subject respondents' expectations of Curriculum Online

	A lot %	A little %	Not at all %	Can't say/Not answered %
encourage teachers use of ICT	16	44	5	35
improve pupil attainment	10	42	6	42

Base: All teachers aware of Curriculum Online 1449

Summary

Around three-quarters of subject respondents (74% in primary schools, 77% in secondary schools) were aware of Curriculum Online. The majority of those aware of Curriculum Online did not feel they knew a great deal about it, with just 2% of subject respondents saying they knew 'a lot' and 22% 'a fair amount'. School respondents in secondary schools tended to feel they knew more about Curriculum Online, with 16% claiming to know 'a lot' and 54% 'a fair amount'. Just over half (53%) of school respondents in primary schools knew 'a lot' or 'a fair amount' about Curriculum Online.

Nearly two-thirds (64%) of primary subject respondents and 52% of secondary subject respondents had first heard about Curriculum Online from someone within the school. For those who had first heard about Curriculum Online from a source outside the school, the most common source was the media.

The Curriculum Online website had been visited by 80% of school respondents in primary schools and 92% in secondary schools. Nearly half (45%) of subject respondents in both primary and secondary schools had visited the website. Just under a third (31%) of primary school respondents and 43% of secondary school respondents visited the Curriculum Online website at least once a month.

The Curriculum Online website had been used to search for products to purchase by 55% of school respondents

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in primary schools and 62% in secondary schools; 11% of primary subject respondents and 20% of secondary subject respondents had used the site to search for products to purchase.

Almost three-fifths (58%) of school respondents in primary schools and 78% in secondary schools said that they used the Curriculum Online website as a source of information when selecting software. The Curriculum Online website was the main or only source of information used to select software for 4% of primary school respondents and 11% of secondary school respondents. Suppliers' catalogues were the most commonly-used sources of information.

Ratings of the ease of finding software had not significantly improved since the baseline survey, with the exception of Key Stage 2, where the proportion of subject respondents saying it was easy to find software rose from 68% to 73%. Ratings of the quality of software available for relevant content and technical quality improved between the baseline and second surveys at Key Stages 1, 2 and 3.

The Curriculum Online website was rated favourably, by the majority of respondents who had used it, for being easy to use and for the information provided about products. Ratings of the website for finding relevant products were slightly lower, with 55% of school respondents in primary schools and 52% in secondary schools saying it was 'very good' or 'quite good'.

Curriculum Online was expected to have a positive impact ('a lot' or 'a little') on encouraging teachers to use ICT by 61% of school respondents and 60% of subject respondents; 56% of school respondents and 52% of subject respondents expected it to have a positive impact on improving pupil attainment.

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3 Curriculum Online funding

This chapter assesses the impact of the system of funding for Curriculum Online. It begins by examining how schools are distributing their eLearning Credits (eLCs) and the effect this has had on the way purchasing decisions are made. The chapter then goes on to look at changes in school spending on software and whether schools are setting aside funding in addition to their eLCs to spend on software. It concludes by discussing schools' views on eLCs and satisfaction with the funding available for curriculum-related software.

3.1 eLearning Credits and purchasing decisions

eLearning Credits have achieved high salience among teachers, with wider recognition of the term 'eLearning Credits' than 'Curriculum Online'. Nearly nine in 10 (87%) subject respondents in secondary schools and 81% in primary schools stated that they had heard of eLearning Credits.

Schools tended to hold their eLCs centrally, with only 20% of secondary schools and 8% of primary schools saying that eLCs were allocated among subjects. Almost a fifth (19%) of secondary teachers and 12% of primary teachers who were aware of eLCs did not know how eLCs were held in their school.

The introduction of eLCs (and the tendency for schools to hold them centrally), appears to have brought about a shift in the way software purchasing decisions are made in secondary schools, away from departments selecting software independently towards submitting requests centrally. Nearly two-thirds (63%) of secondary schools said that teachers would submit requests for a decision to be made by the headteacher, ICT co-ordinator or other senior staff, a significant increase from the baseline when 43% said that decisions were made in this way (Table 3.1, Figure 6). There was a corresponding decrease in the proportion of secondary schools where departments selected software independently, falling to 26% from 46% in the baseline survey. There was no correlation between size of secondary school and the way purchasing decisions were made.

Table 3.1: Software purchasing decisions in schools

	Primary schools %	Secondary schools %
Each subject requests an ICT co-ordinator/ departmental decision	67	63
ICT co-ordinator/ departmental/ other senior selects all software	21	10
Departments select software independently	8	26
Other	3	1
Not answered	1	*
Base: All schools 261 primary 247 secondary		

Similarly, the proportion of secondary subject respondents who said that requests for software were submitted centrally rose from 18% in the baseline to 30% in the second survey (Table 3.2). The proportion who said that their department would make purchases on an ad hoc basis fell from 59% to 47%. There were some contradictions between the responses of school respondents and subject respondents, with a significant number of subject respondents whose school respondent stated requests for software would be submitted centrally saying that their department made ad hoc purchases. This may suggest that practices within departments do not always reflect the central policy of the school.

Table 3.2: Software purchasing decisions in departments

	Primary teachers %	Secondary teachers %
Department/ each subject makes purchases on an ad hoc basis	14	47
Department makes purchases at set times	4	20
Requests submitted to ICT co-ordinator/ departmental/ other senior selects all software	69	30
Other	12	2
Not answered	1	2
Base: All subject respondents 733 primary 1212 secondary		

However, it is notable that subject respondents who used Curriculum Online more extensively were more likely than others to say that purchasing was centralised. Less than two-fifths (39%) of secondary teachers who were frequent visitors said that their department selected software on an ad hoc basis, while more than half (54%) of those who had not heard of Curriculum Online selected

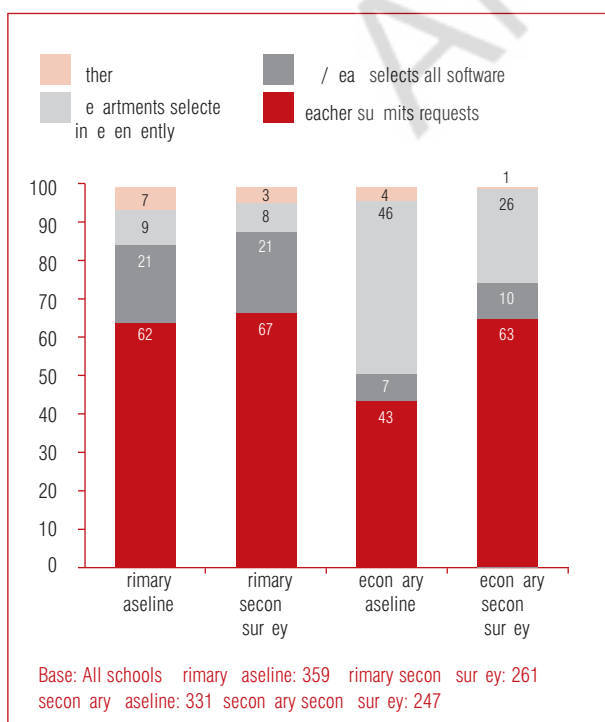
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software in this way. This would further indicate that in secondary schools use of Curriculum Online has led to a more centralised system for purchasing software in order for departments to access eLCs.

At the baseline survey few primary schools said that departments selected software independently and this has not changed (Table 3.1, Figure 6). In two-thirds (67%) of primary schools, teachers submitted requests for decisions to be made centrally, while in 21% all software was selected by the ICT co-ordinator or headteacher. These figures were virtually unchanged since the baseline survey. There was a significant increase in the proportion of primary subject respondents who said that requests were submitted centrally, from 62% in the baseline survey to 69%. The proportion saying that their department made purchases at set times fell from 9% to 4%. The proportion who said that their department or individual teachers made purchases on an ad hoc basis was unchanged at 14%. Again it seems that practices within the school did not always reflect central policy, but there has only had to be minor changes in practice to accommodate the introduction of eLCs.

Figure 6: Software purchasing decisions in schools – Changes since baseline



3.2 Spending on curriculum-related software

Results for spending on curriculum-related software are based on smaller samples since fewer than half of primary and secondary schools (46% and 45% respectively) provided full details of their spending. A further 16% of secondary schools provided figures for either spend on software packages or spend on subscription-based services. In primary schools a further 20% provided a figure for spend on software packages and 7% for spend on subscription services. Secondary schools providing data on software spend were slightly more likely to be frequent visitors to the Curriculum Online website (64% of this group provided data) but otherwise the schools providing data did not differ from the total sample. From the data available it seems that there has been a significant increase in spending on software for the curriculum since the baseline survey.

A substantial rise in average spending was observed in primary schools (Table 3.3). The average total spend on software for the curriculum doubled, from £986 in the baseline to £1,972. The median total spend rose from £500 in the baseline, to £1,500. This rise was largely driven by an increase in spending on subscription-based services which increased from an average of £153 in the baseline to £575. The increase was due to more schools taking up subscription services rather than a significant increase in the amount spent on subscriptions. A quarter (25%) of primary schools stated that they spent something on subscription-based services, up from 9% in the baseline survey. Among primary schools who spent something on subscriptions, the average amount was £1,218. Primary schools' average spending on software packages rose from £834 to £1,308, an increase of 57%.

Table 3.3: Spending on curriculum-related software in primary schools

	Amount	Number of schools answering
Primary schools		
mean total spend on software	1 972	122
Change since baseline	+100	
mean spend on software packages	1 308	168
Change since baseline	+ 7	
mean spend on subscription services	575	137
Change since baseline	+276	
mean total spend per pupil	9 00	122
Change since baseline	+116	

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There was a smaller rise in average spending on software in secondary schools. The average amount spent in the last school year on software packages had risen from £4,292 in the baseline survey to £5,445, an increase of 27% (Table 3.4). Spending on subscription-based services had also risen, from an average of £1,951 in the baseline to £2,898. This brought the average total spend on software in secondary schools to £8,296, an increase of 30% from the average of £6,371 in the baseline survey. The median total spend on software rose from £3,000 to £5,300.

Table 3.4: Spending on curriculum-related software in secondary schools

Secondary schools	Amount	Number of schools answering
Mean total spend on software	£8,296	111
Change since baseline	+ 30	
Mean spend on software packages	£5,445	130
Change since baseline	+27	
Mean spend on subscription services	£2,898	130
Change since baseline	+ 8	
Mean total spend per pupil	£7.88	110
Change since baseline	+18	

Examining spending on a per pupil basis, secondary school spending averaged £7.88 per pupil, rising from £6.69² in the baseline survey. In primary schools there was a more substantial rise in spending per pupil, increasing to £9.00 from £4.172 in the baseline survey. Given that schools were allocated £10 of eLCs per pupil, a larger rise in spending, particularly in secondary schools, might have been expected.

3.3 Dedicating funding for curriculum-related software

There was a fall in the proportion of primary schools who set funding aside for curriculum-related software. In the baseline survey 62% of primary schools set aside funding for software but this has now fallen to 53% (Table 3.5). This would suggest that some schools are using eLCs to replace other funds that were set aside. The relatively low levels of spending on software in primary schools found in the baseline survey might suggest that the eLC funding has been substantially more than the funding that had previously been dedicated.

The introduction of eLCs does not appear to have impacted on the proportion of secondary schools who set funding aside specifically for curriculum-related software. Less than half (45%) of secondary schools set funding aside in addition to the school's eLCs (Table 3.5). In the baseline survey, before eLCs had been distributed, 43% said that they set funding aside.

Table 3.5: Whether funding set aside for curriculum-related software

	Primary schools %	Secondary schools %
Funding set aside	53	45
Change since baseline	- *	+2
Base: All schools	261	247

* = statistically significant change

Secondary school respondents who visited the Curriculum Online website frequently were more likely to be in schools that set funding aside, with 58% of frequent visitors stating that the school had additional dedicated funding for software. This might indicate that schools which prioritise curriculum-related software by setting aside funding may be more likely to have adopted the Curriculum Online website.

3.4 Views on Curriculum Online funding

3.4.1 Views on level of funding

The introduction of dedicated funding for curriculum-related software appears to have led to increased satisfaction with the level of funding available. The largest impact was in primary schools, where the proportion of school respondents who felt that the amount of funding available for software was about right rose from just over a quarter (27%) in the baseline to nearly three-fifths (57%) in the second survey (Figure 7). There was also a significant increase in satisfaction in secondary schools with 39% of school respondents stating that the amount of funding was about right, compared with 20% in the baseline survey (Figure 8). A minority of school respondents (11% in primary schools and 6% in secondary schools) felt that the level of funding available for software now exceeded what they needed.

² Baseline figures for mean spending per pupil have been revised since publication of the baseline survey report.

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Figure 7: Satisfaction with level of funding in primary schools – Baseline and second surveys

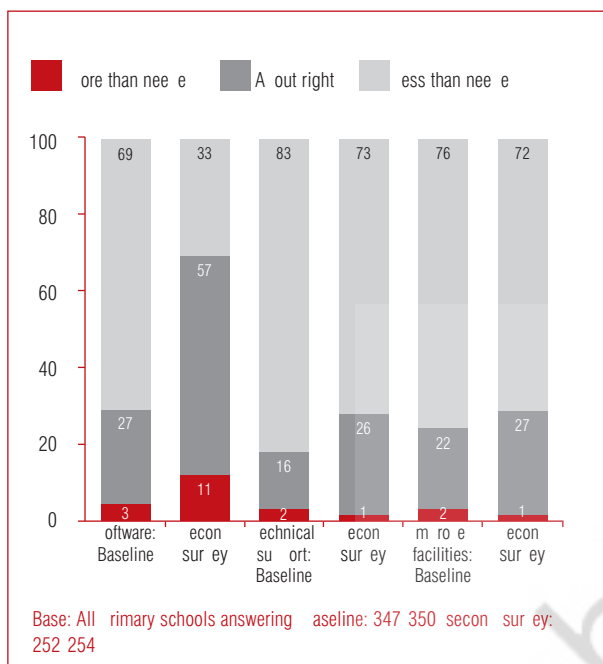
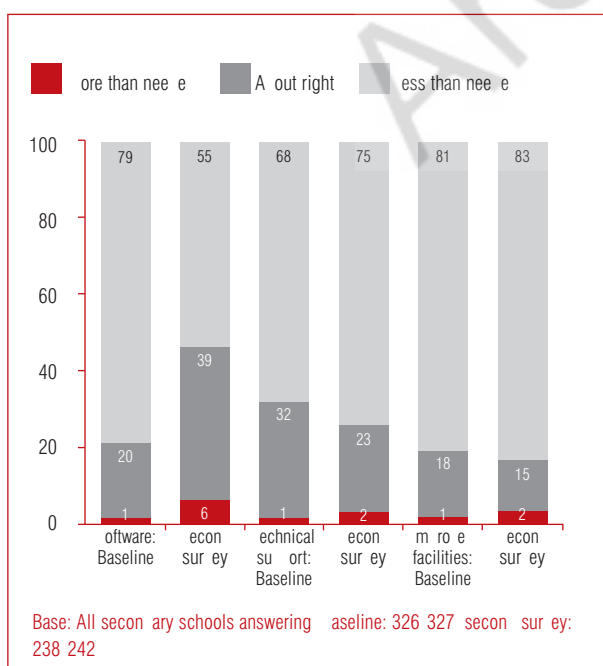


Figure 8: Satisfaction with funding in secondary schools – Baseline and second surveys



Schools were also asked to rate satisfaction with funding for technical support and improving ICT facilities, to provide comparison with the level of satisfaction with funding for software. In primary schools, satisfaction with the level of funding for technical support and improving

facilities also increased, although these rises were much smaller than the rise in satisfaction with funding for software. The proportion of primary school respondents who thought that the amount of funding for improving ICT facilities was about right rose from 22% to 27% and the proportion who thought there was 'about the right amount' of funding for technical support rose from 16% to 26%. This might suggest that more funding is becoming available for ICT in primary schools, but the majority of schools still feel there is less funding than needed for technical support and improving facilities. The larger size of the increase in satisfaction with funding for software indicates that this was due to the introduction, through Curriculum Online, of dedicated funding.

In secondary schools, the increased satisfaction with funding for software was not matched by corresponding increases in satisfaction with funding for improving ICT facilities or technical support as most school respondents remained dissatisfied with funding for these aspects of ICT provision, which are not within the scope of Curriculum Online. There was a small rise in the proportion of school respondents who felt the amount of funding for technical support was less than needed, from 68% in the baseline to 75%, but this rise was not statistically significant. The proportion who felt that the funding available for improving facilities was less than needed showed little change at 83%. This would suggest that the increased satisfaction with the amount of funding available for software in secondary schools was due to the distribution of the eLCs rather than any wider changes in available funding.

3.4.2 Expectations of Curriculum Online related to funding

The majority of school respondents had positive expectations of Curriculum Online in relation to funding, with a higher proportion of respondents than in the baseline survey now able to state a view. Nearly 70% of all school respondents thought that Curriculum Online would have 'a lot' or 'a little' impact on enabling schools to purchase value-for-money software, compared with 56% in the baseline survey (Table 3.6). Nearly six in 10 school respondents (58%) thought that it would have an impact on making the process of purchasing more efficient, an increase of 10 percentage points since the baseline survey. However, the proportion of school respondents who felt that Curriculum Online would not have any impact on making the process of purchasing

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more efficient increased to 17%, from 8% in the baseline. There was still some uncertainty, particularly among primary school respondents, with 30% unable to say whether Curriculum Online would have an impact on the efficiency of the purchasing process.

Frequent visitors to the Curriculum Online website had more positive expectations, with the proportion of school respondents believing that it would have 'a lot' of impact on enabling schools to purchase value-for-money software rising to 40% among those who visited the website at least once a month.

Table 3.6: School respondents' expectations of Curriculum Online related to funding

	A lot %	A little %	Not at all %	Can't say/Not answered %
enable schools to purchase value for money software	26	43	9	22
<i>Change since baseline</i>	<i>0</i>	<i>+1 *</i>	<i>+</i>	<i>-18 *</i>
enable process of purchasing software more efficient	18	40	17	25
<i>Change since baseline</i>	<i>-4</i>	<i>+14 *</i>	<i>+</i>	<i>-1 *</i>
Base: All schools 508	* = statistically significant change			

There were few suggestions for improvement to Curriculum Online relating to the system or level of funding. A small proportion of school respondents (4% in secondary schools and 3% in primary schools) said that more software should be eligible for purchase with eLCs, while 2% of primary school respondents said that hardware purchases should be permitted with eLCs.

Summary

Most subject respondents (81% in primary schools and 87% in secondary schools) had heard of eLearning Credits. These were held centrally in most schools with 8% of primary schools and 20% of secondary schools saying that they allocated eLCs between departments.

The proportion of secondary schools who said that departments purchased software independently fell from 46% in the baseline survey to 26% in the second survey. The proportion saying that teachers would submit requests to the headteacher, ICT co-ordinator or other senior staff member increased from 43% to 63%. Two-thirds (67%) of primary schools said that teachers submitted requests for software, while 21% said that all software was selected centrally by a senior staff member.

Fewer than half of schools (46% primary and 45% secondary) provided full details of spending on software for the curriculum. The average total spend in primary schools doubled, from £986 in the baseline survey to £1,972 in the second survey. In secondary schools the average spend rose from £6,371 in the baseline to £8,296 in the second survey. The proportion of primary schools who set aside funding for software fell from 62% in the baseline survey to 53% in the second survey; 45% of secondary schools set funding aside, a figure that had not changed significantly since the baseline.

Satisfaction with the level of funding available for software had increased, with the proportion of primary schools who felt that the amount of funding was 'about right' rising from 27% at the baseline to 57% at the second survey; 39% of secondary schools thought that the amount of funding was about right, compared with 20% in the baseline survey.

Nearly 70% of school respondents thought that Curriculum Online would have a positive impact on enabling schools to purchase value-for-money software; 58% thought that it would have a positive impact on making the process of purchasing software more efficient.

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4 ICT usage and attitudes

This chapter examines changes in the way ICT was used to support the curriculum and attitudes towards ICT since the baseline survey. It looks at the extent of ICT use in lessons and for homework, the perceived importance of ICT across different subjects and key stages, and attitudes towards ICT in teaching and learning. This information will help to assess whether the introduction of Curriculum Online is succeeding in encouraging teachers to make greater use of ICT and recognise the contribution it can make to teaching and learning.

4.1 Extent of ICT use

4.1.1 Frequency of use in lessons

There were increases in how frequently some ICT resources were used by teachers, although the proportion of teachers using these resources in at least half of lessons remained fairly low in both primary and secondary schools (Table 4.1). In primary schools there were increases in the frequency with which teachers used resources found on the internet and interactive whiteboards in lessons. The proportion of primary subject respondents who used internet-based resources in half or more of lessons rose from 10% in the baseline survey to 14% in the second survey. More than half (55%) of primary teachers used internet resources in less than half of lessons, while nearly a quarter (23%) said that they rarely or never used internet-based resources in lessons.

Just over one in 10 (11%) primary teachers used an interactive whiteboard in half or more lessons, compared with 6% in the baseline survey. The proportion who used an interactive whiteboard in less than half of lessons increased from 16% in the baseline survey to 23% in the second survey, while 16% said they rarely or never used an interactive whiteboard. The proportion of primary teachers who said that interactive whiteboards were not available to them for lesson use fell significantly, from 56% in the baseline survey to 36% in the second survey.

There was little change in the proportion of primary teachers using computer packages in at least half of lessons, from 22% in the baseline survey to 26% in the second survey. Nearly three-fifths (58%) of primary teachers used computer packages in less than half of lessons, while 15% said that they rarely or never used computer packages in lessons.

There were increases in the frequency of use of all ICT resources in secondary schools: 14% of secondary subject respondents used computer packages in half or more lessons, compared with 9% in the baseline survey. Half of secondary teachers used computer packages in less than half of lessons while 32% said they rarely or never used them. Subject-specific software applications were used in at least half of lessons by 14% of secondary teachers compared with 10% in the baseline survey. More than two-fifths (44%) used subject-specific applications in less than half of lessons while a third (33%) rarely or never used these kinds of applications.

The proportion of secondary teachers using an interactive whiteboard in half or more lessons rose from 5% in the baseline survey to 11% in the second survey; 15% of secondary teachers used an interactive whiteboard in less than half of lessons, while just over a fifth (21%) rarely or never used one. The proportion of secondary teachers who said that there was not an interactive whiteboard available to them for lesson use fell from 58% in the baseline survey to 49% in the second survey.

Table 4.1: Frequency of using ICT resources in lessons

	Primary teacher (% half or more lessons)	Secondary teacher (% half or more lessons)
computer packages	26	14
Change since baseline	+4	+ *
internet base resources	14	10
Change since baseline	+4*	+ *
interactive whiteboards	11	11
Change since baseline	+ *	+6*
subject specific software	18	14
Change since baseline	-1	+4*
Base: All teachers	733	1212
* = statistically significant change		

There were correlations between the frequency of using ICT resources in lessons and use of the Curriculum Online website. In primary schools, subject respondents who visited the website frequently were more likely to use internet-based resources (34%) and computer packages (26%) in half or more lessons. Similarly, secondary subject respondents who visited the Curriculum Online website frequently were more likely to use subject-specific applications (20%), computer packages (24%) and internet-based resources (20%) in half or more lessons. Use of the Curriculum Online website was also correlated with the frequency of using resources at the baseline

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survey, indicating that teachers who already incorporated ICT into their lessons on a regular basis have been more likely to adopt the Curriculum Online website.

As in the baseline survey, music respondents were significantly more likely than other subject respondents to use subject-specific software applications, and the proportion of music respondents using such applications in half or more lessons had increased from 35% at the baseline to 46% at the second survey. English respondents remained the least likely to use subject-specific software in lessons. While the proportion of English respondents who said that they rarely or never used subject software fell from 62% to 52%, the proportion saying they did not have this software available increased from 10% to 17%. At the baseline survey, English respondents were the most likely to use internet-based resources in lessons, and while the proportion of English respondents using internet resources in half or more lessons increased from 10% to 14%, there were larger rises among respondents for geography (14% compared to 7% at the baseline) and modern languages (12% compared to 3%). The largest increases for using interactive whiteboards in half or more lessons were seen for maths, the subject respondents now most likely to use them (18% compared with 5% in the baseline survey), science (15% compared with 6%) and geography (15% compared with 7%).

4.1.2 Use of ICT for homework and lesson planning

There were small increases in the proportion of secondary subject respondents stating that homework requiring the use of computers or the internet was set for their subject (Table 4.2). The proportion of secondary teachers who set homework requiring use of a computer 'very' or 'quite' often had risen from 19% in the baseline survey to 23% in the second survey. The proportion setting homework involving internet use 'very' or 'quite' often was 19%, compared with 15% in the baseline survey. The relationship between Curriculum Online and homework setting would only be indirect, with greater emphasis on using ICT for homework indicating a recognition of the importance of ICT in learning.

Setting homework requiring use of computers and the internet was correlated with use of the Curriculum Online website. Almost a third (32%) of teachers who visited the website frequently set homework requiring use of a computer, while more than a quarter (27%) often set homework which required using the internet.

Table 4.2: How often homework requiring computer and internet use is set

	Homework requiring computer use %	Homework requiring internet use %
very often	4	2
<i>Change since baseline</i>	<i>+1</i>	<i>0</i>
quite often	19	17
<i>Change since baseline</i>	<i>+ *</i>	<i>+4*</i>
occasionally	56	60
<i>Change since baseline</i>	<i>+2</i>	<i>+2</i>
Never	21	20
<i>Change since baseline</i>	<i>-4*</i>	<i>-6</i>
Base: All teachers	733	1212

* = statistically significant change

The level of use of digital sources (as opposed to paper-based sources) in lesson planning among primary teachers had increased. Whereas primary teachers in the baseline survey had said that digital sources were used for 15% of lesson planning on average, this proportion had risen to 20% at the second survey. There was not a significant change in the use of digital sources for secondary teachers, with an average of 16% of lesson planning using digital sources, compared with 15% in the baseline survey. As in the baseline survey, music respondents had the highest use of digital sources, accounting for 25% of planning on average, and maths respondents the lowest (11%). There were significant increases in the average level of use of digital resources by respondents for science (from 13% in the baseline survey to 19% in the second survey), geography (from 15% to 19%) and modern languages (from 10% to 12%).

Primary and secondary teachers who were frequent visitors to the Curriculum Online website tended to make greater use of digital sources in lesson planning. Primary teachers who visited the website once a month or more used digital sources for an average of 31% of lesson planning, while for secondary teachers who visited the website at least once a month, digital sources accounted for 24% of lesson planning on average.

4.2 Pupil access to ICT facilities outside lesson time

There was very little change in the access that pupils had to ICT facilities outside of formal lesson time in either primary or secondary schools between the baseline and second surveys (Table 4.3). There was a slight increase in the proportion of primary schools offering any kind of

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pupil access, to 74% compared with 69% in the baseline survey, although this increase was not statistically significant. The most common ways that primary schools had access to ICT facilities were: after school clubs (38%); lunchtime clubs (33%); and informal access at lunchtime (32%). In secondary schools, lunchtime clubs (79%), after school clubs (73%) and informal lunchtime access (69%) remained the most common ways that pupils were allowed access to ICT facilities. As was noted in the baseline survey, larger secondary schools were more likely than smaller schools to offer pupils informal access to facilities: 78% of secondary schools with more than 1,200 pupils offered informal access after school, compared with just over half (51%) in schools of fewer than 800 pupils.

Table 4.3: Pupil access to ICT facilities outside lesson time

	Primary schools %	Secondary schools %
Breakfast clubs	5	26
Lunchtime clubs	33	79
After school clubs	38	73
Informal access before school	10	41
Informal access at lunchtime	32	69
Informal access after school	10	66
None of these	26	1
Base: All schools answering	257	247

4.3 Importance of ICT

4.3.1 Key Stages 1 and 2

The perceived importance of ICT at Key Stages 1 and 2 has increased substantially since the baseline survey. Higher proportions of both school and subject respondents rated ICT as important for each subject and key stage (Table 4.4, Figure 9). More than three-quarters (79%) of primary school respondents rated ICT as 'very' or 'quite' important for Key Stage 1 English, compared with 65% at the baseline survey. The proportion of school respondents rating ICT as important for Key Stage 1 maths rose from 56% at the baseline survey to 74% at the second survey. As in the baseline survey, ICT was perceived to be less important to science at Key Stage 1 than to maths or English. However, the proportion of school respondents rating ICT as important to science increased from 40% to 51%.

Table 4.4: Importance of ICT at Key Stages 1 and 2

	Primary schools		Secondary schools	
	School	Teacher	School	Teacher
Maths	74	75	84	74
Change since baseline	+18*	+18*	+1*	+14*
English	79	66	85	78
Change since baseline	+14*	+7*	+12*	+14*
Science	51	48	71	62
Change since baseline	+11*	+10*	+16*	+8*
Base: All answering	227	566	246	633

* = statistically significant change

The largest increase in the rating of ICT at Key Stage 1 for subject respondents was for maths, with the proportion rating ICT as important rising from 57% in the baseline survey to 75% in the second survey. Two-thirds (66%) of English respondents saw ICT as important at Key Stage 1, compared with 59% at the baseline survey. The proportion of science respondents rating ICT as important for Key Stage 1 remained lower than for other subjects but rose from 38% in the baseline to 48%.

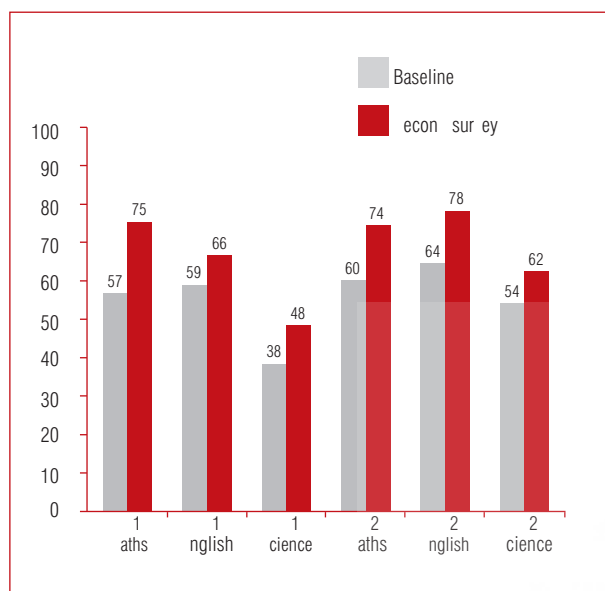
ICT continued to be perceived as more important at Key Stage 2 than at Key Stage 1. The proportion of school respondents rating ICT as important for maths at Key Stage 2 rose from 65% at the baseline survey to 84% at the second survey. The proportion of maths respondents who felt ICT was important at Key Stage 2 rose from 60% at the baseline to 74%. Positive ratings for the importance of ICT rose by similar, although slightly smaller amounts, for English and science.

Use of the Curriculum Online website was correlated to the perceived importance of ICT at Key Stages 1 and 2. Subject respondents who were frequent visitors to the website were more likely to consider ICT to be important to their subject at each key stage. There was no correlation between perceived importance of ICT at the baseline survey and frequency of visiting the Curriculum Online website. This indicates that visiting the website may have improved teachers' perceptions of the importance of ICT.

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Figure 9: Primary subject respondent perceived importance of ICT (% very/quite important)



4.3.2 Key Stages 3 and 4

More than half of school respondents in secondary schools rated ICT as important for each subject at Key Stages 3 and 4 in the baseline survey. These ratings had not changed significantly in the second survey (Table 4.5). At Key Stage 3, maths and science were the subjects for which school respondents were most likely to think ICT was important, with 73% rating it as 'very' or 'quite' important for these subjects. Subject respondents' perceptions of the importance of ICT at Key Stage 3 increased for all subjects with the exception of music. There were significant increases in the perceived importance of ICT for English (62% of respondents rating ICT as important compared with 50% at the baseline) and geography (71% compared with 60%).

At Key Stage 4, school respondents were more likely to perceive ICT to be important for science than for other subjects with 77% rating ICT as 'very' or 'quite' important. The proportion of science teachers rating ICT as important for their subject at Key Stage 4 had risen significantly from 68% in the baseline survey to 79% in the second survey. There was also a significant increase in the proportion of English respondents rating ICT as important at Key Stage 4, from 51% to 62%. There were smaller increases in the proportion of subject respondents for maths, modern languages and geography who thought ICT was important at Key Stage 4.

Table 4.5: Importance of ICT at Key Stages 3 and 4

	Key Stage 3		Key Stage 4	
	School	Teacher	School	Teacher
Maths	73	55	70	51
Change since baseline	+2	+7	-1	+
English	62	62	62	62
Change since baseline	+1	+12*	-2	+11*
Science	73	70	77	79
Change since baseline	-	+8	0	+11*
Modern languages	61	56	55	51
Change since baseline	+2	+8	0	+4
Geography	67	71	68	70
Change since baseline	0	+11*	+	+7
Music	61	60	67	84
Change since baseline	+	0	0	-1
Base: All answering	235	1192	223	1136

* = statistically significant change

Rating ICT as important at Key Stages 3 and 4 was correlated with subject respondents visiting the Curriculum Online website frequently. Four-fifths (80%) of teachers who visited the website at least once a month felt ICT was important at both Key Stages 3 and 4. There was also a correlation between visiting the Curriculum Online website and rating ICT as important in the baseline survey. This suggests that teachers who perceived ICT to be important to their subject were more likely to have become frequent visitors to the Curriculum Online website.

4.4 Attitudes to ICT

4.4.1 Primary schools

The improving perceptions of the importance of ICT at Key Stages 1 and 2 were supported by apparent changes in attitudes towards ICT in primary schools. Eight attitudinal statements from the baseline survey were included in the second survey. Changes in the level of agreement with several of these statements provides further evidence of a shift in perceptions of the role of ICT in the curriculum at Key Stages 1 and 2 (Table 4.6). At the baseline survey, two-fifths (40%) of primary school respondents agreed with the statement 'It is easier to find relevant teaching material in textbooks than on the internet' (Figure 10). At the second survey the proportion agreeing with this statement had fallen to less than a quarter (24%). There was also a fall in agreement with this statement among subject respondents, although nearly half were still in agreement (46% compared with 56% in the baseline survey).

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There was a significant rise in agreement with the statement *'There is a lot of useful material for the curriculum on the internet'*. More than nine in 10 (92%) primary school respondents were now in agreement with this statement, compared with 84% at the baseline survey (Figure 11). The proportion of subject respondents agreeing with this statement also rose, from 77% to 82%. Among primary subject respondents there appeared to be an increasing recognition of the wider role of ICT in the curriculum. Agreement with the statement *'ICT is used in the curriculum mainly to develop technical skills'* fell from 29% in the baseline survey to 21% in the second survey. The proportion of subject respondents agreeing that *'Using ICT resources can improve the attainment of pupils'* rose from 78% to 85%.

Primary subject respondents who visited the Curriculum Online website frequently had more positive views on the usefulness of the internet for teaching material. More than nine in 10 (91%) teachers who visited the website at least once a month agreed that *'There is a lot of useful material for the curriculum on the internet'* while less than a quarter (24%) agreed that *'It is easier to find relevant teaching material in textbooks than on the internet'*. Frequent visitors to the Curriculum Online website were also more positive about the value of ICT in teaching with 93% agreeing with the statement *'ICT is a valuable aid for teaching across the curriculum'* and 56% agreeing that ICT resources help in giving individualised feedback. Among school respondents in primary schools there were fewer correlations between visiting the website and positive views about ICT. However, primary school respondents who visited the website at least once a month were more likely to strongly agree that there was a lot of useful material on the internet (46% compared with 18% of those who had never visited the website) and that using ICT could improve attainment (38% compared with 24% of non-users).

Table 4.6: Agreement with statements on attitudes towards ICT – Primary schools

	School (% strongly agree/agree)	Teacher (% strongly agree/agree)
There is a lot of useful material for the curriculum on the internet <i>Change since baseline</i>	92 +8*	82 +*
ICT is used in the curriculum mainly to develop technical skills <i>Change since baseline</i>	23 -	21 -8*
Using ICT resources can improve the attainment of pupils <i>Change since baseline</i>	91 +	85 +7*
ICT is a valuable aid for teaching across the curriculum <i>Change since baseline</i>	96 +2	92 +
It is easier to find relevant teaching material in textbooks than on the internet <i>Change since baseline</i>	24 -16*	46 -10*
Using ICT resources can help in responding to different pupil abilities <i>Change since baseline</i>	90 +8*	83 +8*
ICT resources can help in giving individualised feedback <i>Change since baseline</i>	52 +	45 +7
ICT is not relevant for every subject <i>Change since baseline</i>	31 -	32 +6*
Base = All answering primary school respondents in range 258-261 primary teachers in range 720-728		* = statistically significant change

4.4.2 Secondary schools

There were fewer changes in views among secondary school and subject respondents (Table 4.7). The proportion of school respondents disagreeing with the statement *'It is easier to find relevant teaching material in textbooks than on the internet'* rose from 26% at the baseline survey to 36%, although nearly a quarter (23%) still agreed with this statement. The proportion of subject respondents in secondary schools agreeing with this statement fell from 56% to 51%. There was a rise in the proportion of school respondents who strongly disagreed with the statement *'ICT is not relevant for every subject'* from 15% in the baseline survey to more than a quarter (27%) in the second survey. Secondary subject respondents appeared to be increasingly positive about the wider uses of ICT in teaching: 84% of secondary subject respondents in the second survey agreed with the statement *'Using ICT resources can help in responding to different pupil abilities'* compared with 76% in the baseline

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survey. There was also a small rise, from 44% to 49%, in the proportion agreeing that *'ICT resources can help in giving individualised feedback to pupils'*.

Table 4.7: Agreement with statements on attitudes towards ICT – Secondary schools

	School (% strongly agree/agree)	Teacher (% strongly agree/agree)
There is a lot of useful material for the curriculum on the internet <i>Change since baseline</i>	86 +2	78 -1
ICT is used in the curriculum mainly to develop technical skills <i>Change since baseline</i>	15 -	21 0
Using ICT resources can improve the attainment of pupils <i>Change since baseline</i>	92 -2	82 +
ICT is a valuable aid for teaching across the curriculum <i>Change since baseline</i>	98 +2	88 +1
It is easier to find relevant teaching material in textbooks than on the internet <i>Change since baseline</i>	23 -	51 - *
Using ICT resources can help in responding to different pupil abilities <i>Change since baseline</i>	92 +	84 +8*
ICT resources can help in giving individualised feedback to pupils <i>Change since baseline</i>	71 -1	49 + *
ICT is not relevant for every subject <i>Change since baseline</i>	15 -4	13 -2

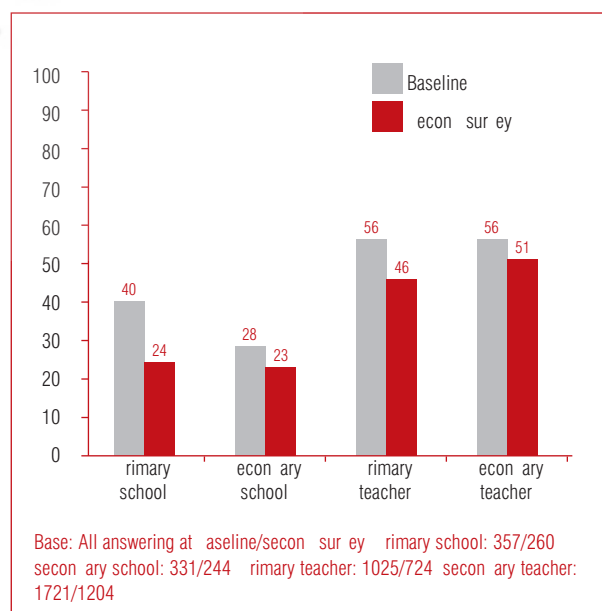
Base = All answering secondary school respondents: 244 secondary teachers in range 1191/1206

* = statistically significant change

Secondary subject respondents who were frequent visitors to the Curriculum Online website had more positive attitudes towards ICT. Those who visited the website at least once a month were more likely to see the internet as a useful source of teaching material, with 92% agreeing that *'There is a lot of useful material for the curriculum on the internet'* and just over a quarter (28%) agreeing that *'It is easier to find relevant teaching material in textbooks than on the internet'*. They were also more likely to think that using ICT had positive effects, with 89% agreeing that using ICT could improve attainment and 90% agreeing that it could help in responding to different pupil abilities. The attitudes of school respondents in secondary schools did not differ significantly according to their use of the Curriculum Online website.

Subject respondents in secondary schools who were familiar with Curriculum Online and made more extensive use of digital resources in lessons (defined as those who knew 'a lot' or 'a fair amount' about Curriculum Online and used either subject-specific software, internet resources or an interactive whiteboard in at least half of lessons) were more positive in their views of the benefits of using ICT in teaching and learning. Two-fifths (40%) of this group strongly agreed that *'Using ICT resources can improve the attainment of pupils'* compared with 18% of other subject respondents. Nearly half (46%) strongly agreed that *'ICT is a valuable aid for teaching across the curriculum'* compared with 25% of other teachers. This group comprised 8% of the sample of subject respondents in secondary schools. While their familiarity with Curriculum Online may have contributed to their positive views, it may also be the case that they were 'ICT enthusiasts' who have more quickly adopted Curriculum Online.

Figure 10: 'It is easier to find relevant teaching material in textbooks than on the internet' (% strongly agree/agree)

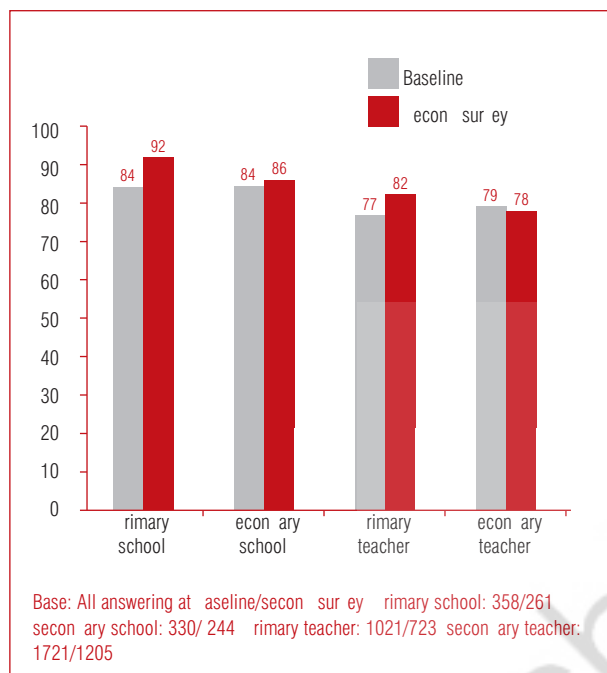


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Figure 11: 'There is a lot of useful material for the curriculum on the internet' (% strongly agree/agree)



4.5 Teacher confidence and enthusiasm

Teachers are increasingly perceived by school respondents to have confidence in using ICT resources and to be enthusiastic about using these resources to deliver the curriculum. The proportion of primary school respondents who thought that teachers in the school overall were 'very' or 'quite' confident in using ICT rose from 69% in the baseline survey to 79% in the second survey (Figure 12). Primary school respondents were also increasingly likely to feel that teachers were enthusiastic towards using ICT with more than two-thirds (68%) stating that all or most teachers were enthusiastic compared with 54% in the baseline survey (Figure 13).

Secondary school respondents were also more likely to think that teachers in their school were confident in using ICT resources. More than three-quarters (76%) thought that teachers in their school were 'very' or 'quite' confident in using ICT, compared with 67% in the baseline survey. The proportion of secondary schools who felt that all or most teachers were enthusiastic did not change significantly from the baseline survey (61% compared with 58%). Higher ratings of teacher confidence in secondary schools correlated with having a better ratio of pupils to computers. Among schools in the tertile with fewest pupils to each computer, 88% thought teachers

were very or quite confident, compared with 60% in the tertile sharing computers between the most pupils.

Figure 12: School respondent rating of teacher confidence in using ICT (% very/quite confident)

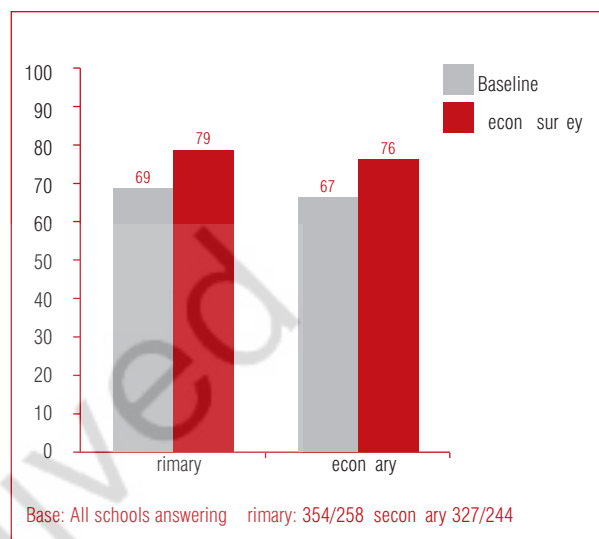
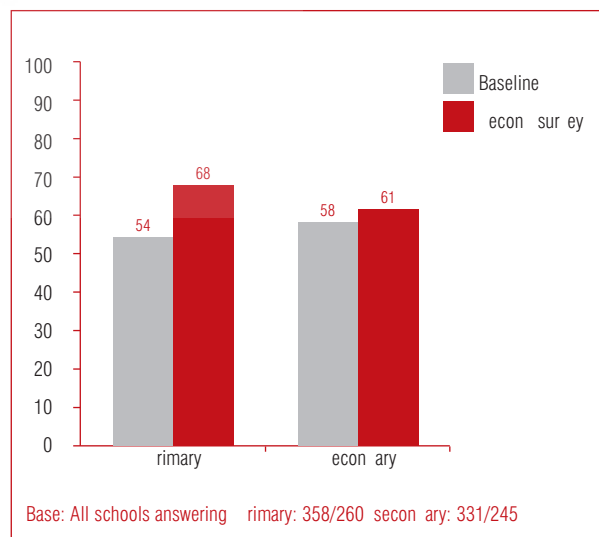


Figure 13: School respondent rating of teacher enthusiasm towards ICT (% all/most enthusiastic)



Summary

ICT resources were being used in lessons more frequently than in the baseline survey. The proportion of primary school subject respondents who used internet-based resources in half or more lessons increased from 10% in the baseline to 14% in the second survey. The proportion using an interactive whiteboard in at least half of lessons increased from 6% to 11%. In secondary schools the proportion of subject respondents using

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computer packages in half or more lessons rose from 9% to 14%. Subject-specific software applications were used in half or more lessons by 14% of secondary subject respondents, compared with 10% in the baseline survey. The proportion of secondary subject respondents using an interactive whiteboard in at least half of lessons rose from 5% in the baseline to 11% in the second survey.

There were small increases in the proportions of secondary teachers who often set homework requiring use of a computer (from 19% to 23%) and access to the internet (from 15% to 19%). The average proportion of primary teachers' lesson planning using digital, rather than paper-based, sources increased from 15% in the baseline to 20% in the second survey. Digital sources accounted for 16% of secondary teachers' lesson planning on average, compared with 15% at the baseline survey.

The perceived importance of ICT at Key Stages 1 and 2 had increased since the baseline survey. Three-quarters of respondents for maths rated ICT as important at Key Stage 1 while 74% did so for Key Stage 2. Two-thirds of English respondents felt ICT was important at Key Stage 1 and 78% at Key Stage 2. Fewer science respondents rated ICT as important (48% at Key Stage 1 and 62% at Key Stage 2) but these figures had significantly increased since the baseline survey.

At Key Stage 3 the proportion of subject respondents rating ICT as important had increased significantly for English (62% compared with 50% at the baseline) and geography (71% compared with 60%). At Key Stage 4 the proportion of subject respondents who felt ICT was important to their subject increased for science (79% compared with 68%) and English (62% compared with 51%).

There was a change in attitudes towards ICT among respondents in primary schools. The proportion of school respondents in primary schools who agreed that *'It is easier to find relevant teaching material in textbooks than on the internet'* fell from 40% in the baseline to 24% in the second survey. The proportion of primary subject respondents agreeing with this statement fell from 56% to 46%. The proportion of school respondents in primary schools who agreed that *'There is a lot of useful material for the curriculum on the internet'* rose from 84% in the baseline to 92%, while the proportion of subject respondents agreeing with this statement rose from 77% to 82%.

Attitudes to ICT in secondary schools did not change significantly on the whole between the baseline and second surveys. The proportion of secondary subject respondents who agreed that *'It is easier to find relevant teaching material in textbooks than on the internet'* fell from 56% to 51%. There was a rise in the proportion of subject respondents in secondary schools who agreed that *'Using ICT can help in responding to different pupil abilities'* from 76% to 84%.

Teachers were perceived by school respondents to be more confident in using ICT resources. In primary schools the proportion of school respondents who felt that teachers were 'very' or 'quite' confident in using ICT rose from 69% at the baseline to 79% in the second survey. In secondary schools the proportion of school respondents who thought teachers were confident in using ICT rose from 67% to 76%.

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5 ICT resources

This chapter examines changes in the levels of ICT resources in schools between the baseline survey in autumn 2002 and the second survey in autumn 2003³. It also looks at whether teachers' views on the resources they had available had changed since the baseline survey. The chapter goes on to examine whether there have been any changes in the type of internet connections that schools had and where internet connections and computers for teaching were located within the school. This information helps to inform the key findings of the survey relating to Curriculum Online, as changes in the levels of resources or speed of internet connection, for example, are likely to have affected use of Curriculum Online and curriculum-related software.

5.1 Resources available

Levels of resources had increased by autumn 2003 in both primary and secondary schools since the baseline survey (Table 5.1). In primary schools there was only a slight increase in the number of desktop computers, rising from an average of 24 in the baseline to 26 in the second survey. There was a more substantial rise in the average number of laptops, which increased from 4 to 7. More than half (56%) of primary schools now had at least one interactive whiteboard, a significant increase from the baseline when only 39% had any. The average number of interactive whiteboards in primary schools increased from 1 to 2. The average number of data loggers in primary schools remained at 1, with just over two-fifths (41%) of primary schools stating that they had any. Very few primary schools (7%) had any handheld computers.

The average numbers of desktop computers and laptops in secondary schools had risen since the baseline survey. The average number of desktop computers per school rose from 169 to 199, while the average number of laptops rose from 24 to 35. The average number of interactive whiteboards also increased slightly, from 4 in the baseline to 5 at the second survey, and the proportion of secondary schools that stated they did not have any interactive whiteboards fell from 24% to 16%. The average number of data loggers in secondary schools fell slightly, from 8 in the baseline to 7. As in the baseline survey, only a minority of secondary schools had any handheld computers (21%).

Table 5.1: Resources available in schools

Resources	Primary schools		Secondary schools	
	Mean	Change baseline	Mean	Change baseline
desktop computers	25.6	+1	199.2	+0
laptops	6.6	+2.7	35.0	+11
interactive whiteboards	1.6	+0	5.4	+1.6
handheld computers	0.8	+0.2	2.2	+0
data loggers	0.8	+0.1	6.7	-0
Base: All schools	261		247	

Secondary schools that could be defined as adopting Curriculum Online (see Chapter 6) had, on average, higher numbers of interactive whiteboards. The average number of interactive whiteboards in schools defined as adopting Curriculum Online was 6.8, compared to 4.2 in schools that did not meet this definition.

5.1.1 Pupil:computer ratios

In schools where the ratio of pupils to computers (including both desktops and laptops) is low, we might expect that pupils are likely to have higher access to computers and that teachers will be more easily able to use computers in lessons. In Chapter 2, having lower numbers of pupils to each computer was shown to increase the likelihood that school respondents in secondary schools had visited the Curriculum Online website and made a higher number of searches for software. Subject teachers in secondary schools with lower numbers of pupils to each computer were more likely to cite the Curriculum Online website as their main source of information for selecting software.

Ratios for the number of pupils per computer had improved in both primary and secondary schools, reflecting the upward trend in the overall numbers of computers. Including both desktop and laptop computers, primary schools had an average pupil:computer ratio of 8.0:1, compared with 9.1:1⁴ in the baseline survey (Figure 14). Dividing primary schools into tertiles, the cut-off point for the lowest tertile had fallen from 7.7 to 6.0 pupils per computer while schools in the highest tertile now had 8.3 pupils or more for each computer, compared with 9.9 or more in the baseline survey.

³ More recent data on schools' ICT infrastructure is available via the DfES Research & Statistics Gateway (<http://www.dfes.gov.uk/rsgateway/contents.shtml>).

⁴ Average pupil:computer ratios in the baseline survey have been adjusted since publication of the baseline survey report.

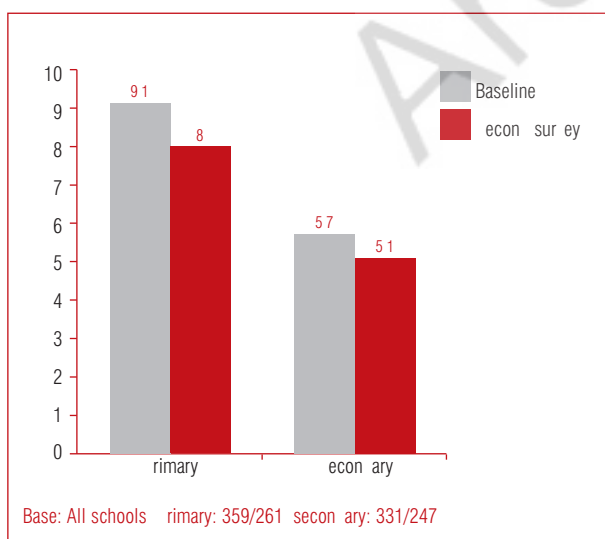
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The numbers of pupils per computer in secondary schools saw a slightly smaller improvement between the baseline and second surveys than in primary schools (Figure 14). The average pupil:computer ratio in secondary schools was 5.1:1 in the second survey, compared with 5.7:1 in the baseline survey⁴. The lowest tertile of secondary schools had 3.9 or fewer pupils per computer, compared with 4.5 or fewer in the baseline survey, while the cut-off point for the highest tertile had fallen from 6.3 pupils per computer in the baseline survey to 5.4 in the second survey. The number of pupils to each laptop had a wider distribution than the number to each desktop. Secondary schools in the lowest tertile of pupil:computer ratios had an average of 25 pupils per laptop while those in the highest tertile had an average of 94. The average number of pupils per desktop was 4 for schools in the lowest tertile of ratios and 9 for those in the highest tertile.

The average pupil:computer ratios in the second survey are very close to those reported in the ICT in Schools survey of 2003 which reported average ratios of 7.9:1 in primary schools and 5.4:1 in secondary schools.

Figure 14: Average number of pupils per computer in schools



5.1.2 Resources available to teachers

Access to interactive whiteboards and laptops among primary subject respondents improved between the baseline and second surveys, with almost half (49%) of subject respondents now having access to each of these resources (Table 5.2, Figure 15). The proportion of primary subject respondents who said that they had a dedicated interactive whiteboard for their subject rose

from 6% in the baseline to 13% in the second survey. More than a third (36%) said that they had access to interactive whiteboards shared with other subjects, compared with 28% in the baseline survey. This rise reflects the increase in the number of primary schools that had interactive whiteboards. The proportion of primary subject respondents with dedicated laptops for their subject had also risen, from 7% in the baseline to 14%, probably as a result of the increased numbers of laptops available in primary schools. Nearly all primary teachers (94%) had access to desktop computers while less than a quarter (23%) had access to data loggers, figures that had not changed significantly since the baseline.

Primary school subject respondent access to laptop computers was correlated to the number of pupils to each computer in the school. Half of subject respondents in schools in the tertile with the highest numbers of pupils to each computer did not have any access to laptops, compared with a third in schools in the tertile with the lowest numbers of pupils per computer.

Table 5.2: Resources available to primary subject respondents

Availability of resource	Desktop computers %	Laptops %	Interactive whiteboards %	Data loggers %	Handheld computers %
dedicated for subject	34	14	13	7	2
Change since baseline	+2	+7*	+7*	+1	+1
shared	60	35	36	16	2
Change since baseline	-2	+	+8*	0	0
Not available/not answered	7	51	51	78	96
Change since baseline	+1	-10*	-1*	0	-1
Base: All primary teachers 733 * = statistically significant change					

Access to desktop computers for secondary teachers was virtually unchanged from the baseline survey (Table 5.3, Figure 16). Two-fifths (39%) had access to desktops dedicated for their subject, while just over half (51%) shared desktops with other subjects. Access to desktop computers was, unsurprisingly, correlated to the ratio of pupils to computers in schools. Almost half (48%) of secondary teachers in schools with low numbers of pupils for each computer had access to desktops dedicated for their subject, compared with 31% in schools with the highest numbers of pupils per computer. Almost three-quarters (74%) of music respondents had dedicated desktops, a finding that was also noted in the baseline survey.

The availability of data loggers was also unchanged, with 17% of subject respondents overall having access to

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data loggers. Most of these were science teachers, 78% of whom had dedicated data loggers available.

Subject respondents in schools that could be defined as adopting Curriculum Online (see Chapter 6) were more likely to have access to dedicated desktop computers and interactive whiteboards for their subject.

Figure 15: Availability of computers and interactive whiteboards to primary subject respondents (% dedicated or shared access)

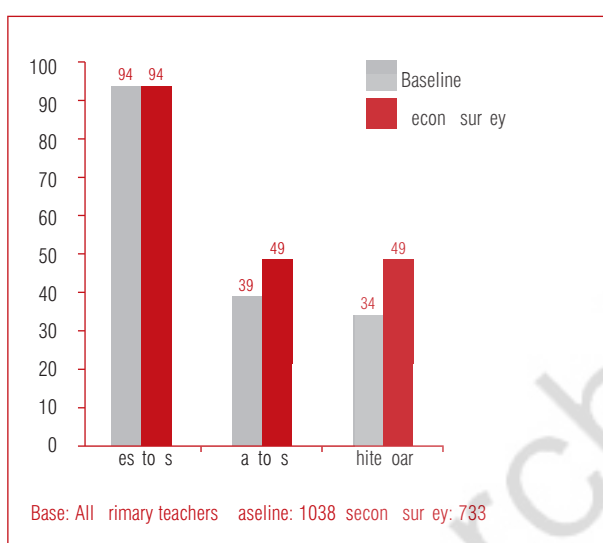
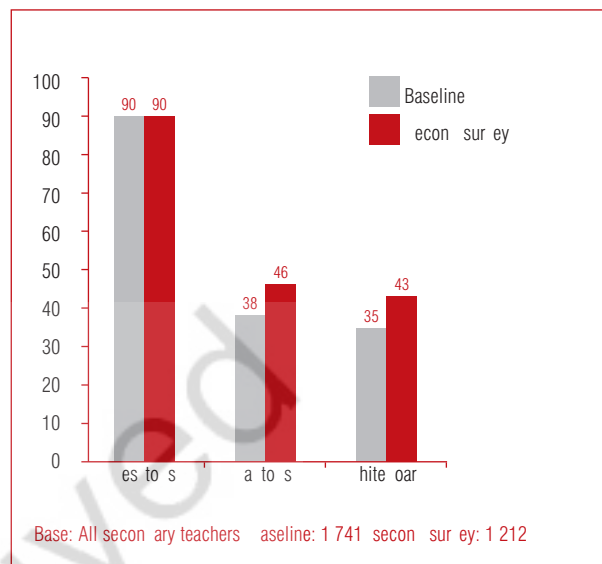


Table 5.3: Resources available to secondary subject respondents

Availability of resource	Desktop computers %	Laptops %	Interactive whiteboards %	Data loggers %	Handheld computers %
Available for subject	39	28	24	13	1
Change since baseline	-1	+ *	+ *	-1	0
Available for teacher	51	18	19	4	1
Change since baseline	+1	-1	-1	+1	0
Not available/not answered	11	54	57	83	98
Change since baseline	+1	-8*	- *	0	-1

Base: All secondary teachers 1212 * = statistically significant change

Figure 16: Availability of computers and interactive whiteboards to secondary teachers (% dedicated or shared access)



5.2 Views on resources available

Primary school respondent views on the fitness for purpose of ICT resources available in the school had not changed significantly since the baseline survey, with most still rating resources highly (Table 5.4). The views of subject respondents in primary schools on the fitness for purpose of resources were likewise unchanged, except that there was a small but statistically significant rise in the proportion of primary subject respondents rating the fitness for purpose of laptops as 'very good' or 'good' (85% in the baseline survey, 90% in the second survey).

Primary school respondent satisfaction with the quantity of desktops increased, with just over a third (34%) stating that the school had less desktops than needed, compared with 43% in the baseline survey (Table 5.5). The proportion of primary teachers who felt that the school had less desktops than needed similarly fell, from 46% in the baseline survey to 40% in the second survey. Satisfaction with the quantity of desktop computers in schools tended to reflect the actual level of resources available: 42% of school respondents in schools with high numbers of pupils to each computer felt that there were less desktops available than were needed, compared with 24% in schools with a low number of pupils per computer.

Primary teachers' satisfaction with the quantity of laptops appeared to have improved significantly with the proportion stating that the number available was less

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than needed dropping from 70% in the baseline survey to 55% in the second survey. The proportion of school respondents in primary schools who felt that their school had fewer laptops than needed also fell slightly, but this fall was not statistically significant.

Despite the increase in the proportion of primary schools with interactive whiteboards, more than seven in 10 (71%) school respondents in schools with at least one interactive whiteboard felt that their school had less than they needed, a figure that had not changed significantly from the baseline survey.

Table 5.4: Rating of fitness for purpose of resources in primary schools (% very good/good)

	School %	Teacher %
desktop computers	92	89
Change since baseline	+1	+1
laptops	92	90
Change since baseline	-	+ *
interactive whiteboards	97	93
Change since baseline	+1	+1
data loggers	72	77
Change since baseline	-12*	+2
Base: All with each type of resource answering primary school: range 102 256 primary teacher: range 158 692		* = statistically significant change

Table 5.5: Rating of quantity of resources in primary schools (% saying 'less than we need')

	School %	Teacher %
desktop computers	34	40
Change since baseline	- *	-6*
laptops	61	55
Change since baseline	-6	-1 *
interactive whiteboards	71	59
Change since baseline	+2	+4
data loggers	61	66
Change since baseline	-1	+6
Base: All with each type of resource answering primary school: range 107 258 primary teacher: range 164 691		* = statistically significant change

Most secondary school respondents continued to rate the ICT resources available highly for their fitness for purpose, with little change from the baseline survey (Table 5.6). There was also little change in the views of secondary subject respondents on the fitness for

purpose of resources, with most rating the resources available as 'very good' or 'good'. However, the proportion of subject respondents rating desktop computers as 'very good' or 'good' fell slightly, from 84% in the baseline survey to 79% in the second survey.

School respondents' satisfaction with the quantity of laptops and desktop computers available was higher in the second survey than in the baseline, but the majority still felt they had less than was needed (Table 5.7). The proportion of school respondents in secondary schools who stated that the quantity of desktops was 'less than we need' fell from 66% in the baseline survey to 56% in the second survey, while the proportion stating that the quantity of laptops was less than needed fell from 77% to 67%. Most secondary school respondents (84%) still felt that the school had fewer interactive whiteboards than needed.

Secondary subject respondents' satisfaction with the quantity of laptops had also improved slightly, with the proportion stating that the school had fewer laptops than needed falling from 75% in the baseline survey to 67% in the second survey. The views of secondary subject respondents on the quantities of other ICT resources had not changed significantly since the baseline survey (other than in relation to data loggers), with most still stating that the school had less of each type of resource than needed.

Satisfaction with the quantity of desktop computers was correlated with the actual level of resources in the school. Two-thirds (66%) of secondary school respondents in schools with the highest numbers of pupils to each computer stated there were fewer desktops than needed, compared with 45% in schools with low numbers of pupils to each computer. Subject respondents' satisfaction with the quantity of desktop computers was also correlated to the numbers of pupils per computer in the school. More than one in 10 (11%) teachers in secondary schools that had a high number of pupils per computer said that they did not have desktop computers available to them, compared with just 3% in schools with a low number of pupils to each computer. Among teachers who did have access to desktops, 75% of those in schools with high numbers of pupils per computer felt the quantity available was less than needed, compared with 64% in schools with the lowest numbers of pupils per computer.

Although subject teachers in secondary schools that could be described as adopting Curriculum Online (see Chapter 6) were more likely to have dedicated desktop

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computers and interactive whiteboards for their subject, they did not differ from other respondents in their views on the quantity or fitness for purpose of these resources.

Table 5.6: Rating of fitness for purpose of resources in secondary schools (% very good/good)

	School %	Teacher %
Access to computers	93	79
Change since baseline	-	- *
Access to software	95	83
Change since baseline	-2	-1
Interactive whiteboards	96	90
Change since baseline	+1	-1
Data loggers	84	71
Change since baseline	+1	-6

Base: All with each type of resource answering secondary school: range 164 246 secondary teacher: range 218 1056

* = statistically significant change

Table 5.7: Rating of quantity of resources in secondary schools (% saying less than we need)

	School %	Teacher %
Access to computers	56	69
Change since baseline	-10*	-1
Access to software	67	67
Change since baseline	-10*	-8*
Interactive whiteboards	84	71
Change since baseline	-4	-2
Data loggers	71	56
Change since baseline	-1	-12*

Base: All with each type of resource answering secondary school: range 150 247 secondary teacher: range 216 1088

* = statistically significant change

5.3 Internet and networking

5.3.1 Internet connections

There appears to be a positive trend in schools accessing the internet through broadband connections, in line with government policy. This trend was more accelerated in primary schools where a relatively small proportion (22%) at the baseline had broadband connections. This proportion had more than doubled, to 47% at the second survey (Table 5.8, Figure 17). There was a corresponding fall in the number of primary schools with an ISDN connection, from 71% in the baseline survey to 47% in the second survey. At the

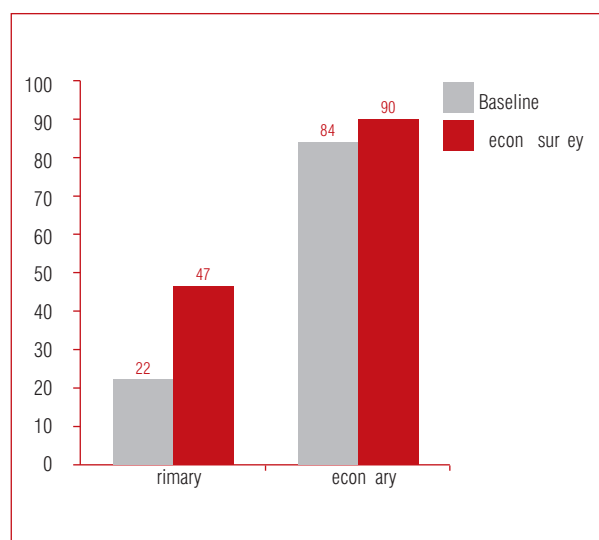
baseline survey most (84%) secondary schools already had a broadband internet connection, but this had risen further, to 90%, at the second survey. There was a move away from ISDN connections with the proportion of secondary schools with this form of connection falling from 20% in the baseline survey to 8% in the second survey.

Although having a broadband internet connection might be expected to enable teachers to access and use the Curriculum Online website more easily, there was no correlation between having a broadband connection and usage of the website.

Table 5.8: Form of internet connection

Type of connection	Primary schools %	Secondary schools %
Broadband	47	90
Change since baseline	+2 *	+6 *
ISDN	47	8
Change since baseline	-24*	-12*
Dial up	7	5
Change since baseline	-	-1
Ease line	1	7
Change since baseline	-	+4
Base: All answering	251	245

Figure 17: Changes in proportions of schools with broadband internet connection



5.3.2 Speed of internet connection

Levels of satisfaction with the speed of the school's internet connection had risen significantly in primary

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schools (Table 5.9). Nearly half (46%) of school respondents stated that the connection was 'fast enough for all or most requirements', compared with 26% in the baseline survey. A similar proportion (47%) of subject respondents in primary schools thought that the internet connection was fast enough for all or most requirements, up from 33% in the baseline survey. Nearly three-quarters (72%) of school respondents in primary schools with broadband access thought that the connection was fast enough for all or most requirements, indicating that the overall rise in satisfaction with speed is due to the increased number of schools with broadband.

Satisfaction with the speed of internet connections did not change significantly among secondary school respondents, with 69% stating that the connection was fast enough for all or most requirements. There was a small rise in the proportion of secondary subject respondents who felt that the internet connection was fast enough for all or most requirements, from 51% in the baseline to 55% in the second survey.

Table 5.9: Speed of internet connection

	Primary school		Secondary school	
	School %	Teacher %	School %	Teacher %
Fast enough for all/most requirements	46	47	69	55
<i>Change since baseline</i>	<i>+20*</i>	<i>+14*</i>	<i>+7</i>	<i>+4*</i>
Fast enough for some requirements	35	36	23	34
<i>Change since baseline</i>	<i>-8*</i>	<i>-8*</i>	<i>-1</i>	<i>-1</i>
Not fast enough for our requirements	20	17	8	11
<i>Change since baseline</i>	<i>-11*</i>	<i>-6*</i>	<i>-6</i>	<i>-4*</i>
Base: All answering	258	716	246	1187

* = statistically significant change

5.3.3 Number of internet connections

There was an increase in the proportion of school respondents, in both primary and secondary schools, who felt that the school had more internet connections than needed, although they remained a minority (Table 5.10). Among primary school respondents the proportion who felt there were more connections than needed rose from 5% to 10% while in secondary schools 17% of school respondents said that the number of connections was 'more than we need', compared with 11% in the baseline survey. The majority of school respondents

(63% in primary schools and 61% in secondary schools) still felt that the number of connections was about the right amount to deliver the curriculum.

Satisfaction with the number of internet connections rose among primary subject respondents, with 64% stating that the number was about right, compared with 58% in the baseline survey. Satisfaction with the number of internet connections was correlated with the number of pupils per computer in the school, teachers' awareness of Curriculum Online and whether the school respondent visited the Curriculum Online website. Among teachers in schools with high numbers of pupils to each computer, 39% felt there were less internet connections available than needed, compared with 22% in schools with low numbers of pupils per computer. The proportion of primary teachers who felt there were not enough internet connections rose to 37% among those who had not heard of Curriculum Online and 39% among those in schools where the ICT respondent had never visited the Curriculum Online website.

Logistic regression was undertaken to investigate the relationships between these factors and satisfaction with the number of internet connections. This analysis revealed that being in a school with high numbers of pupils to each computer and having an ICT respondent who had never visited the Curriculum Online website were both significantly associated with stating that the school had less internet connections than needed. However, there was no significant association with awareness of Curriculum Online. Primary teacher awareness of Curriculum Online has already been shown to be correlated with ICT respondent use of the website (Chapter 2) and this regression shows that it does not have an independent correlation with views on the number of internet connections. This analysis would suggest that primary schools where teachers are more dissatisfied with the access they have to the internet are less likely to have adopted the Curriculum Online website.

Secondary subject respondents' views on the number of internet connections available had not changed significantly since the baseline, with around half (52%) stating that about the right amount of connections needed to deliver the curriculum were available. The views of secondary subject respondents on the number of internet connections available were correlated with the ratio of pupils to computers in the school. Nearly half (48%) of secondary teachers in schools with high numbers of pupils to each computer felt that there were less internet connections

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available than needed. This correlation, seen in both secondary and primary schools, indicates that having a high ratio of pupils to computers does make teachers more likely to feel that they do not have the level of access to the internet that they need to deliver the curriculum.

Table 5.10: Number of internet connections

	Primary school		Secondary school	
	School %	Teacher %	School %	Teacher %
More than we need	10	7	17	8
Change since baseline	+ *	+7	+6*	0
About the right amount	63	64	61	52
Change since baseline	+	+6*	-2	+
Less than we need	27	29	22	40
Change since baseline	-11*	-6*	-4	-4*
Base: All answering	257	709	241	1161

* = statistically significant change

5.3.4 Networking

Networking of computers in schools had become more extensive between the baseline and second surveys. Nine in ten (90%) primary schools had at least some networking compared with 78% at the baseline survey (Table 5.11). There was also a rise in the proportion of primary schools with all computers networked, from 31% in the baseline survey to 39% in the second survey. All secondary schools already had at least some computers networked at the baseline survey. The proportion of secondary schools with all computers networked increased from 62% in the baseline survey to 73% in the second survey.

Table 5.11: Networking

How many computers linked	Primary schools %	Secondary schools %
All	39	73
Change since baseline	+8*	+11*
More than half	36	27
Change since baseline	+4	-10*
Around half	10	*
Change since baseline	+2	-1
Less than half	6	0
Change since baseline	-1	0
None	10	0
Change since baseline	-12*	0
Base: All schools	261	247

* = statistically significant change

5.4 Location of computers and internet connections in schools

The location of computers had not changed significantly since the baseline survey in either primary or secondary schools. Just under a fifth (18%) of primary schools did not have a dedicated ICT room, with all computers located in classrooms (Table 5.12). More than two-thirds (68%) of primary schools had computers mainly in a dedicated room with additional computers in classrooms. This figure is slightly higher than in the baseline survey (62%) but the increase is not statistically significant. Most secondary school respondents (89%) said that computers were mainly located in a dedicated ICT room with some also in classrooms.

Table 5.12: Location of computers in schools

	Primary schools %	Secondary schools %
Only in dedicated room/suite	2	3
Change since baseline	+1	0
Mainly in dedicated room but some in classrooms	68	89
Change since baseline	+6	0
Mainly in classrooms but some in suite	12	8
Change since baseline	-	0
No dedicated room facilities located in classrooms	18	0
Change since baseline	-4	0
Base: All schools answering	258	246

Note: - = percentage value of 0

Primary schools were increasingly likely to have internet connections in more than one location in the school: 71% of primary schools in the second survey had internet connections in more than one place, compared with 58% in the baseline survey (Table 5.13, Figure 18). The most common locations remained a dedicated ICT room (80%) and classrooms (78%). More than a fifth (21%) of primary schools had a set of portable laptops with internet access and 30% had internet connections in a library or learning resource centre. More than half (52%) of primary schools said that a dedicated ICT room was the main location for internet connections, while for a further 17% it was the only location. Although the majority of primary schools had internet access in classrooms, just 12% said this was the main location while a further 13% only had internet connections in classrooms.

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Table 5.13: Location of internet connections in primary schools

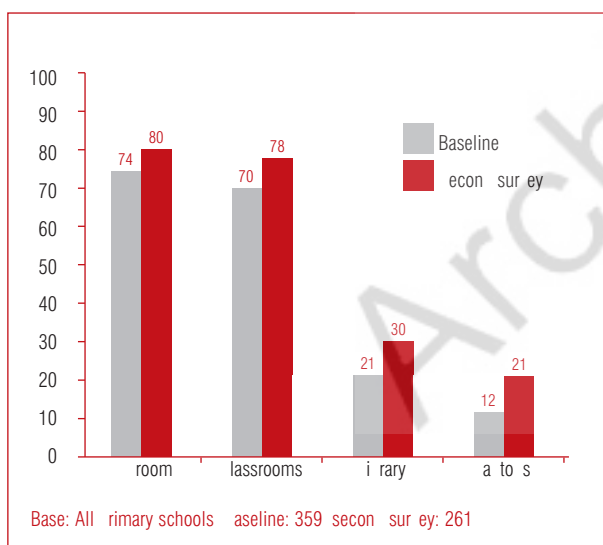
	All %	Main location %	Only location %
dedicated ICT room	80	52	17
Change since baseline	+6	+ *	-6
Library/learning resource centre	30	1	
Change since baseline	+ *	-2	
Set of portable laptops	21	2	
Change since baseline	+ *	+1	
Classrooms	78	12	13
Change since baseline	+8*	+	-

Base: All primary schools 261

Note: + = percentage value of 0

* = statistically significant change

Figure 18: Location of internet connections in primary schools



Most (90%) secondary schools at the baseline survey had internet connections in more than one location and this had risen further at the second survey to 96% (Table 5.14, Figure 19). As in the baseline survey, almost all (98%) had internet connections located in a dedicated ICT room. The proportion of secondary schools with internet connections in classrooms had risen from 73% at the baseline survey to 83% at the second survey. Half of secondary schools now had a set of portable laptops with internet access, compared with just under a third (32%) at the baseline survey. More than three-quarters (76%) of secondary schools said the ICT room was the main location for internet connections, with just 4% saying that classrooms were the main location.

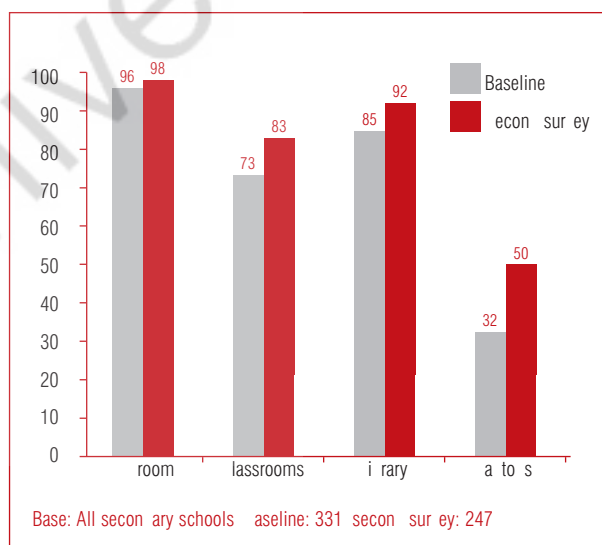
Table 5.14: Location of internet connections in secondary schools

	All %	Main location %	Only location %
dedicated ICT room	98	76	2
Change since baseline	+2	+7	-4
Library/learning resource centre	92	3	
Change since baseline	+7*	0	0
Set of portable laptops	50		
Change since baseline	+18*	0	0
Classrooms	83	4	2
Change since baseline	+10*	+1	-1

Base: All secondary schools 247

* = statistically significant change

Figure 19: Location of internet connections in secondary schools



Summary

There were increases in the levels of ICT resources in both primary and secondary schools. The average number of desktop computers in primary schools increased from 24 in the baseline survey to 26, while the average number of laptops increased from 4 to 7. The proportion of primary schools with an interactive whiteboard rose from 39% to 56%. In secondary schools the average number of desktop computers increased from 169 in the baseline to 199; 84% of secondary schools had an interactive whiteboard, with an average number of 5 per school.

The ratios of the numbers of pupils per computer had improved in both primary and secondary schools since the baseline survey. The average pupil:computer ratios were 8.0:1 in primary schools and 5.1:1 in secondary schools.

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The proportions of subject respondents in primary schools with access to laptops and interactive whiteboards for teaching had increased significantly since the baseline survey: 14% of primary subject respondents had laptops dedicated for their subject use while 35% had shared access, while 13% had access to a dedicated interactive whiteboard and 36% had shared access to one. There were rises in the proportion of secondary subject respondents with access to dedicated laptops and interactive whiteboards for their subject: 28% of secondary subject respondents had dedicated subject laptops, compared with 19% in the baseline survey, while the proportion with dedicated interactive whiteboards rose from 15% to 24%.

Satisfaction with the quantity of desktop and laptop computers had improved in primary schools. The proportion of subject respondents who felt there were less desktops available than needed fell from 46% to 40% and the proportion who felt there were fewer laptops than needed fell from 70% to 55%. In secondary schools, the proportion of school respondents who thought the school had fewer desktop computers than needed fell from 66% in the baseline to 56%, while the proportion who felt that there were fewer laptops than needed fell from 77% to 67%. The proportion of subject respondents who felt that the school had fewer laptops than needed also fell, from 75% to 67%.

The proportion of primary schools with broadband internet access had more than doubled, from 22% at the baseline survey to 47%. The proportion of secondary schools with broadband had also risen from 84% to 90%. Satisfaction with the speed of the school's internet connection rose significantly in primary schools, with 47% of subject respondents saying it was fast enough for all or most requirements, compared to 33% in the baseline survey.

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6 Adoption of Curriculum Online

This chapter seeks to assess the impact that Curriculum Online has had on teaching and the extent to which Curriculum Online has been adopted in schools. It discusses different means of measuring adoption of Curriculum Online and examines outcomes in terms of teaching and attitudes to ICT that might be associated with impacts of Curriculum Online. 'Adoption' of Curriculum Online is defined in this context as schools buying into the vision of Curriculum Online of providing access to, and funding for, digital learning resources, aligned to the National Curriculum, to enable teachers to enrich and develop the use of ICT in the classroom.

6.1 Indicators of the extent of Curriculum Online adoption

In order to measure the extent to which Curriculum Online has been established within schools, it is necessary to establish indicators of adoption. To examine Curriculum Online adoption within a school, indicator variables can be aggregated across the subject respondents for each school. Several variables could potentially be used to assess the extent of adoption of Curriculum Online. This section discusses these possible indicators of adoption while the following section examines how they correlate to outcomes in teaching and learning.

Using the variable of 'ever visiting the Curriculum Online website' as an indicator has the advantage that it is a measure of exposure to Curriculum Online. However, it does not indicate the depth of teachers' knowledge or understanding of Curriculum Online. Also, it is possible that teachers could have familiarity with the Curriculum Online programme and eLearning Credits without having visited the website.

Another potential indicator of adoption of Curriculum Online is teachers' knowledge of the programme. This would be defined as teachers stating that they knew 'a lot' or 'a fair amount' about Curriculum Online. The value of using this variable is that it indicates some familiarity with the Curriculum Online programme. However, the disadvantage is that it is a self-defined perception rather than an objective measure of behaviour.

Positive expectations of what Curriculum Online will achieve could also be taken as an indicator that Curriculum Online has been adopted, in that positive

expectations may indicate enthusiasm for the programme based on experience of it. Only a small proportion of teachers had negative expectations of Curriculum Online but a substantial proportion were unable to state a definite view, suggesting that they did not have sufficient knowledge of the initiative to form a view. The disadvantage of using positive expectations of the programme as an indicator of adopting Curriculum Online is that these expectations are subjective views and do not necessarily require a full and accurate understanding of Curriculum Online.

Tables 6.1 and 6.2 show the proportions of primary and secondary schools in three groups for each of the above indicator variables: no subject respondents meeting the criteria; up to half of subject respondents meeting the criteria; and more than half the subject respondents meeting the criteria.

Table 6.1: Primary school indicators of Curriculum Online adoption

Proportion of subject respondents in school	Visiting website %	Knowing a lot/a fair amount about Curriculum Online %	Expecting Curriculum Online to have an encouraging use of ICT %
None	18	54	17
to half of subject respondents	25	26	20
more than half of subject respondents	49	13	55
ata missing	8	8	8

Base: All primary schools 261

Table 6.2: Secondary school indicators of Curriculum Online adoption

Proportion of subject respondents in school	Visiting website %	Knowing a lot/a fair amount about Curriculum Online %	Expecting Curriculum Online to have an encouraging use of ICT %
None	9	42	9
to half of subject respondents	37	45	37
more than half of subject respondents	51	12	51
ata missing	3	1	4

Base: All secondary schools 247

6.2 Relationships between indicators of Curriculum Online adoption and outcomes for teaching

This section explores relationships between indicators of Curriculum Online adoption and outcomes for teaching

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and learning. Outcomes that could suggest that Curriculum Online has had a positive impact might include:

- increased use of digital resources in lessons
- increased use of other ICT resources in lessons
- more positive ratings of software for relevant content
- more positive attitudes towards ICT.

Associations between these outcomes and indicators of adopting Curriculum Online could suggest that Curriculum Online has had a positive impact. However, associations between the indicators and teaching outcomes do not necessarily imply a causal relationship. Teachers completing subject questionnaires will not necessarily be the same individuals in the baseline and second surveys, so changes in attitudes may be due to a change in respondent. Questions on frequency of use of ICT resources were asked about lessons for the subject as a whole and so should reflect teaching practice across the department.

6.2.1 Primary schools

There was only one significant association between indicators of adopting Curriculum Online and positive teaching outcomes in primary schools. Subject respondents knowing 'a lot' or 'a fair amount' about Curriculum Online was correlated with using computer packages more frequently in lessons. Although this was the only association with a *change* in behaviour or attitudes, knowing 'a lot' or 'a fair amount' about Curriculum Online was associated with positive attitudes towards ICT. Knowledge of Curriculum Online was correlated positively with rating software highly for relevant content at Key Stage 2 and thinking ICT had an important role in the Key Stage 2 curriculum. These correlations might indicate that 'early adopters' of Curriculum Online have been teachers who were enthusiastic about ICT and able to access relevant software.

6.2.2 Secondary schools

There were more associations among subject respondents in secondary schools between indicators of adopting Curriculum Online and changes in ICT behaviour and attitudes. Knowing 'a lot' or 'a fair amount' about Curriculum Online was correlated with increased use of internet-based resources in lessons and with increased use of interactive whiteboards since the

baseline survey. Having visited the Curriculum Online website was correlated with increased use of subject-specific software applications and interactive whiteboards. There were also some improvements in attitudes towards ICT among subject respondents who could be said to have adopted Curriculum Online. There were correlations between knowing 'a lot' or 'a fair amount' about Curriculum Online and giving a higher rating of importance for ICT at Key Stages 3 and 4 in the second survey than in the baseline. Having visited the Curriculum Online website was correlated with giving a higher rating for the importance of ICT at Key Stage 4.

At the school level the association between subject respondents adopting Curriculum Online and increased usage of ICT resources was retained. Secondary schools with a higher proportion of teachers who knew 'a lot' or 'a fair amount' about Curriculum Online had higher proportions of teachers who were using internet resources and interactive whiteboards more frequently in lessons. Schools with a higher proportion of teachers who had visited the Curriculum Online website also had higher proportions of teachers making increased use of subject-specific software applications and interactive whiteboards.

6.3 Characteristics of schools adopting Curriculum Online

As there were associations between indicators of teachers adopting Curriculum Online and positive teaching outcomes in secondary schools, it is possible to examine the characteristics of secondary schools that could be said to have adopted Curriculum Online.

Secondary schools where more than half the subject respondents had visited the Curriculum Online website had on average more pupils than schools where fewer subject respondents had visited the website. This association between adopting Curriculum Online and size of school supports the findings reported in Chapter 2 that school and subject respondents in larger schools were more likely to be using the Curriculum Online website.

Schools with a higher proportion of subject respondents who had visited the Curriculum Online website had on average greater numbers of interactive whiteboards in the school. Secondary schools where more than half the subject respondents had visited the website had an average of 6.8 interactive whiteboards while schools where fewer subject respondents visited the site had 3.9 interactive whiteboards on average. There were no

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school characteristics associated with the proportion of teachers who knew 'a lot' or 'a fair amount' about Curriculum Online.

There were some associations between the school characteristics associated with adoption of Curriculum Online and positive teaching outcomes. There were positive correlations between the number of interactive whiteboards and having higher proportions of teachers making increased use of subject-specific software applications and interactive whiteboards in lessons. Schools with a higher number of interactive whiteboards also had higher proportions of teachers giving an improved rating of the importance of ICT at Key Stage 4. There was a positive correlation between the number of pupils in the school and the proportion of subject respondents using computer packages more often.

It is possible to define a sub-group of secondary schools which can be said to have adopted Curriculum Online. Based on the associations discussed above, this group was defined as schools where more than half of subject respondents had visited the Curriculum Online website or knew a lot/a fair amount about Curriculum Online and more than half were using at least one ICT resource (computer packages, subject-specific software, interactive whiteboards, internet resources) more frequently than in the baseline survey. Using this measure, 45% of secondary schools in the survey could be said to have adopted Curriculum Online. Being in this group of schools correlated positively with having a higher number of interactive whiteboards in the school. This was the only association between adopting Curriculum Online and ICT infrastructure in the schools.

Summary

Usage of the Curriculum Online website, knowledge of Curriculum Online and positive expectations of its impact could all to some extent be taken as indicators of Curriculum Online adoption.

Among primary subject respondents, knowledge of Curriculum Online was associated with increased use of computer packages in lessons. There were no other associations between indicators of adopting Curriculum Online and changes in behaviour or attitudes in primary schools, but knowledge of Curriculum Online was correlated with positive attitudes towards ICT.

Among secondary subject respondents, knowledge of Curriculum Online was correlated with increased use of

internet-based resources and interactive whiteboards. Visiting the Curriculum Online website was correlated positively with increased use of subject-specific software and interactive whiteboards. These correlations between indicators of adoption and increased use of ICT resources in lessons were retained when data was aggregated across subject respondents and analysed at the school level.

Secondary schools where more than half the subject respondents had visited the Curriculum Online website had more pupils on average than schools where smaller proportions of subject respondents had visited the site. Secondary schools with higher proportions of subject respondents who had visited the website also had greater numbers of interactive whiteboards.

Secondary schools adopting Curriculum Online were defined as having more than half of subject respondents visiting the website or knowing a lot/a fair amount about Curriculum Online and more than half the subject respondents using at least one ICT resource more frequently in lessons. This group of schools had greater numbers of interactive whiteboards than other schools.

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7 Conclusions

The second survey of the evaluation of Curriculum Online has been carried out at the end of a year which has seen a substantial investment by the Government in the provision of ICT in schools. The survey has followed the same methodology as the baseline and included a number of repeated measures. As in the baseline survey, high response rates were achieved among school ICT contacts and subject teachers. Consequently, the survey allows robust conclusions to be drawn about the impact of Curriculum Online and associated funding increases on schools.

The survey has found substantial evidence of increased provision of ICT resources in schools, increased use of the internet by teachers, including substantial use of Curriculum Online, and more favourable attitudes among teachers towards their schools' provision of ICT and its relevance to the curriculum. The launch of Curriculum Online is a key part of this process, although it is sometimes difficult to distinguish between its impact and that of increased funding in bringing about changes in teaching and learning styles through increased use of digital content.

In the report of the baseline survey, it was noted that the perceived need among teachers for greater quantities of ICT resources might limit the extent to which ICT could be utilised across the curriculum. Additional funding in 2003 has brought about some improvement in the level of resources. In autumn 2003 the survey found one computer per 8 primary school pupils and 5.1 secondary school pupils compared with ratios of 1:9.1 and 1:5.7 a year before. Availability of laptops and interactive whiteboards that were dedicated for subject use increased significantly in both types of school. Broadband internet connections were reported in just under half of primary schools in the autumn of 2003 compared with just under a quarter a year before, while in secondary schools broadband penetration increased from an already high base to 90% of schools. The extent of networking of computers also increased.

These changes were noticed by staff in schools who reported higher levels of satisfaction with their schools' resources and the speed of internet connections than in the baseline survey. However, the majority of teachers still felt that the level of funding for their school's facilities was less than was needed.

Following the introduction of eLCs in autumn 2003, there has been a substantial increase in spending on

curriculum-related software in primary schools where average total spend doubled from just under £1,000 per annum to just under £2,000 per annum since the baseline survey. In secondary schools a more modest increase of just under a third was observed. Together, these changes brought mean spend on software per primary school pupil up to a level comparable to that per secondary school pupil (about £8 compared with about £9), whereas spend in secondary schools had been higher than that in primary schools a year before. Following this new spending, two-thirds of primary school ICT contacts felt that funding of software was adequate compared with less than a third a year before. In secondary schools just under a half of ICT contacts felt that funding for software was adequate compared with only a fifth a year before.

Although eLCs increased overall spending on software, especially in schools where this spending had been low, the proportion of schools which set aside funding specifically for curriculum-related software did not increase. This indicates that some schools took the opportunity of eLCs to divert parts of their previous budget for curriculum-related software to other uses. Another consequence of the new funding arrangements was an increased centralisation of control of spending on curriculum-related software in secondary schools (spending in primary schools was already very centralised, reflecting their smaller size). Departments had to submit requests for eLC funding to the ICT co-ordinator or headteacher whereas they had previously made independent selections. The next survey in this series will show whether this change was a short-term consequence of the introduction of Curriculum Online or a more enduring change. It will be of interest to investigate whether any purchasing strategy is associated with greater and more effective use of digital learning.

Following its launch in January 2003 Curriculum Online has achieved high levels of awareness among school staff. Approximately three-quarters of subject respondents in the second survey stated that they were aware of Curriculum Online, compared with under half in the baseline survey. Usage of the Curriculum Online website was highest among school ICT contacts with 80% of those in primary schools and 92% of those in secondary schools visiting the website at some point. Nearly half of subject teachers (45%) also visited the website, while one in 10 primary school teachers and a fifth of secondary teachers had searched for products on the site. This seems to be a reasonable level of progress although it may be of concern that as many as a quarter

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of these teachers were still not aware of Curriculum Online. Moreover, most of those who knew anything about Curriculum Online lacked detailed knowledge of it or only visited it infrequently; only a quarter of teachers in each type of school professed to know a little or a lot about the scheme.

The survey found that most respondents who had visited the Curriculum Online website had a moderately favourable view of it. However, a number of suggestions for improvement were noted, including a need for searches to be easier and less time-consuming, and for searches to produce fewer results and be narrowed down by subject area more effectively. School respondents actually had lower expectations of the potential of Curriculum Online to encourage use of ICT than they had at the baseline survey, which indicates some disappointment with its performance. However, subject teachers, who had lower expectations a year before, had slightly higher expectations at the second survey. These mixed views about the effectiveness of the website echo the findings of the operational effectiveness strand and were taken account of in the relaunch of the website in late December 2003, towards the end of the fieldwork for this survey. The next stages of the research will need to check whether these changes have overcome these reservations. If they do, there would seem to be significant potential for use of Curriculum Online to grow substantially.

These findings indicate that Curriculum Online has made a positive start, although it still has some way to go before it can be regarded as the default option for teachers wishing to access curriculum-related software. Curriculum Online was more commonly used by subject respondents than suppliers' websites but was only used by half the proportion who used suppliers' catalogues. eLCs were found to have greater salience among subject respondents than Curriculum Online, with 81% of subject teachers in primary schools and 87% of those in secondary schools saying that they had heard of them.

Most teachers who had heard of the website had found out through personal contacts, although the media also played a significant role for about a quarter of primary teachers and about a third of secondary teachers. Thus, increased usage of Curriculum Online is likely to be driven mainly by positive feedback from colleagues. More publicity for Curriculum Online, linked to promotion of eLCs and aimed directly at teachers, could encourage greater use of the website.

Although the Curriculum Online website had not achieved full penetration of subject teachers, a minority were using it quite frequently and their attitudes and experiences diverged from those of their colleagues. About a third of subject teachers in primary and secondary schools visited the website at least once a month. These teachers appeared to be highly comfortable with this method of accessing software, were much less likely to report difficulties in locating the sort of material that they wanted, and gave higher ratings than their colleagues for the subject content and technical quality of software. Early 'adopters' of the Curriculum Online website appear to have been teachers who were already confident and experienced in accessing software.

The research found that the environment for the development of Curriculum Online was more positive than at the time of the baseline survey as the various changes of the past year had resulted in improved perceptions of the usefulness and importance of ICT in teaching and learning. Teachers' ratings of the importance of ICT increased most significantly in primary schools, where use of ICT was relatively low at the baseline survey. Compared with a year before, more subject teachers agreed that useful material for the curriculum could be obtained on the internet and that ICT resources could improve the attainment of pupils, while the proportion who felt that it was easier to find teaching material in textbooks fell (to just under a half). Subject teachers' confidence in using ICT had also risen significantly so that more than three-quarters felt that they were confident compared with two-thirds at the time of the baseline. This was a notable improvement over a 12-month period. It is clear that Curriculum Online has played a role in bringing about this change, as indicated by the more positive attitudes held by its frequent users, even when differences in their characteristics are taken into account.

The next stage of the evaluation of the educational impact of Curriculum Online will focus in greater depth on teachers' and pupils' experiences of using the website and material obtained from it, using qualitative research. The final survey in the series, in 2005, will further track changes in the level of provision of ICT resources and curriculum-related software, use of Curriculum Online and satisfaction with it, and attitudes towards the use of ICT in the curriculum. Its further evidence will allow the longer-term impact of Curriculum Online on teaching and learning styles to be assessed.

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Appendix A – Methodology

Selection of schools

Baseline survey

The population for this study was maintained primary and secondary schools in England. The first stage of drawing the sample was to select 110 Local Education Authorities (LEAs), based on total pupil size and region. The ICT Test Bed LEAs⁵ were excluded from this survey. A sample frame of schools within the selected LEAs was provided by the DfES's EduBase (excluding schools recently sampled for other DfES studies), with additional information supplied from the Annual Schools Census. Each selected LEA was divided into two geographical strata, based on grid references of schools, and one stratum per LEA was selected.

Schools were then divided into two groups, based on the proportion of pupils eligible for free school meals; these groups were then subdivided into two sub-groups, based on the proportion of pupils from non-white ethnic groups. Finally, schools were sorted in size order within each sub-group. Four primary schools and four secondary schools in each LEA were then systematically selected, giving a total issued sample of 880 schools.

Second survey

The sample for the second survey consisted of schools that had participated in the baseline survey. A small number of schools were removed from the sample as the high response to the baseline survey meant that there were more schools in the sample than had been budgeted for recontacting. Altogether, 49 primary schools and 21 secondary schools were systematically selected for removal from the sample, leaving a total sample to be recontacted of 310 primary and 310 secondary schools.

Selection of teachers

It was agreed with the DfES that the most appropriate method of collecting data on teachers' usage and attitudes to ICT would be to provide questionnaires to be completed on behalf of key subject areas. Teachers would be asked to respond on behalf of their subject or department as a whole. It was important that questionnaires should be issued for the same subjects in

each school to enable useful comparison and subjects were selected in consultation with the DfES. Maths, English and science were selected as they are the key National Curriculum areas. In secondary schools, modern languages was included as a fourth key subject, and geography and music were selected to represent a humanity and an arts subject.

Contacting schools

NatGen's telephone unit contacted the schools in September 2003 to check the details of the named ICT contact from the baseline survey and to collect details of a new contact if this person was no longer at the school. A letter was sent to the ICT contacts, enclosing a summary of the results from the baseline survey and informing them that the second survey would be taking place later in the term.

A further letter was sent to the ICT contacts at the start of the fieldwork, informing them that a NatGen interviewer would be contacting them. The interviewers then telephoned the ICT contacts to arrange an appointment to visit the school.

The first school visit

The first visit to the school was used to collect details of subject teachers who would be given questionnaires and to arrange the distribution of questionnaires to teachers. The ICT contact provided the names of the most appropriate staff members to complete the subject questionnaires. In primary schools these had to be subject co-ordinators or equivalent as the questionnaire was not suitable for a class teacher to complete. In secondary schools the head of department was preferred but other staff in the department could complete the questionnaire if the head of department was unavailable. Where possible, the interviewer distributed the questionnaires to the selected teachers in person, but otherwise gave them to the ICT contact to distribute. The ICT contact was given a copy of the school questionnaire to complete themselves. All questionnaires were accompanied by a letter describing the study and explaining how to complete the questionnaire.

Teachers completing questionnaires for this survey did not have to be the same individuals who took part in the baseline survey.

⁵ The ICT Test Bed Project is a four-year project developed by the DfES to examine how effective ICT use can support the Government's wider aim of school reform, and is taking place in three LEAs in England.

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The second school visit

The interviewer returned to the school at a time arranged with the ICT contact to collect the completed questionnaires. If any questionnaires were not returned at this time, the interviewer left a pack containing a replacement questionnaire, accompanying letter and a reply-paid envelope for the teacher concerned so that they could return the questionnaire by post to NatCen.

Response rate

A good response was received from the schools. First and second visits were completed with 88% of primary schools and 87% of secondary schools selected for the survey. The base for analysis (schools where a school questionnaire was completed) was 84% of selected primary schools and 80% of secondary schools. The rate of returns from subject teachers was also good, with 89% of subject teachers from participating primary schools and 75% of teachers in secondary schools completing a questionnaire. Response rates for schools were slightly higher than in the baseline survey, which is to be expected since non-participating schools from that survey were excluded from the follow-up. However, response rates for subject teachers fell slightly (from 92% for primary schools and 82% for secondary schools), which indicates that some teachers were disinclined to co-operate a second time. Overall, the yield of interviews was in line with expectations.

Data analysis

The data from the questionnaires were keyed in by an external agency and edited by NatCen's Operations Department. Weighting of the data was carried out to account for probability of selection. Weights were calculated to correct for the probability of the LEA being selected and the probability of the school being selected, based on the total number of primary or secondary schools in the LEA. The weights were adjusted for this survey to account for the probability of being retained in the sample.

Sample characteristics

This section discusses the characteristics of the sample of schools when weighted.

Primary schools

The average number of pupils in the primary schools that took part was 242. More than half of these schools (58%) were community funded (that is funded through the LEA), while nearly a quarter (23%) were voluntary aided and a further 16% voluntary controlled. Half of primary schools had 5% or fewer pupils from non-white ethnic groups, while a quarter had 14% or more pupils from these groups. The average proportion of primary pupils eligible for free school meals was 14%, but this ranged from 3% or fewer in the lowest quartile to 19% or more in the highest quartile. On average, 17% of pupils in primary schools had special educational needs (including those with and without a statement).

Table A1 shows the breakdown of participating primary schools by government office region.

Table A1: Primary schools by government office region

Government office region	Schools %
East of England	11
East of England	12
London	11
North East	4
North East	13
North West	14
North West	14
South East	10
South East	12
Base: All primary schools 261	

Secondary schools

The average number of pupils in the secondary schools in the survey was 1011. Most schools (87%) were mixed gender, with 7% being all boys and 6% all girls. The majority (84%) were comprehensive, while 4% were selective and 5% secondary modern⁶. Nearly two-thirds (63%) of secondary schools were community funded, while 18% had Foundation status, 15% were voluntary aided and 3% voluntary controlled. In addition, 6% of secondary schools in the survey were Beacon schools.

The proportion of pupils from non-white ethnic groups was 3% or fewer in a quarter of schools, but 17% or higher in a further quarter. On average, 15% of secondary school pupils were eligible for free school meals, but this

⁶ This information was unavailable for 7% of schools.

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ranged from 6% or fewer in the lowest quartile of schools, to 20% or more in the highest quartile. The average proportion of pupils with special educational needs (with or without a statement) was 16%, ranging from 8% or fewer in the lowest quartile of schools to 18% or more in the highest quartile.

Table A2 shows the breakdown of secondary schools in the survey by government office region.

Table A2: Secondary schools by government office region

Government office region	Schools %
ast i lan s	12
ast of nglan	12
on on	13
North ast	5
North est	14
outh ast	14
outh est	8
est i lan s	12
or shire an um er	9
nformation not a ila le	1

Base: All secon ary schools 247

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The ICT in Schools programme is central to the Government's ongoing programme of school reforms. *Fulfilling the Potential*, launched by the Secretary of State for Education and Skills in May 2003, outlines future directions for ICT as an enabler in whole school development and teaching and learning. Copies of *Fulfilling the Potential* are available on www.dfes.gov.uk/ictinschools. Research and evaluation is being undertaken using a variety of techniques, both qualitative and quantitative, and at both national and local level.

Below you can find a list of the reports published so far in the ICT in Schools Research and Evaluation series, produced by Becta for the Department for Education and Skills (DfES).

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department for
education and skills
creating opportunity, releasing potential, achieving excellence



DfES
Sanctuary Buildings
Great Smith Street
Westminster
London
SW1P 3BT

ISBN 1-84478-361-8

Produced by Becta for the Department for Education and Skills

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