

**STATISTICS OF
EDUCATION**

*Survey of Information
and Communications
Technology in Schools
1999*

CONTENTS

Title	Page
Introduction	3
Key facts	5
Section 1:	9
ICT Development plan	
Section 2:	11
Finance and computers in schools	
Expenditure and sources of funding	
Number of computers available	
Types of computer available	
Other hardware items available	
Deployment of computers in schools	
Section 3:	17
Internet usage and other external electronic communication services	
Access to the Internet	
Pupils and teachers with personal e-mail addresses	
Section 4:	21
Use of ICT in teaching	
Use of ICT in areas of the curriculum	
Teacher confidence and training	
Contribution of ICT to teaching learning and administration	
Special Educational Needs	
National Learning targets	
Section 5:	27
Support for ICT	
ICT Co-ordinator support	
Sources and types of support	
Statistical Annex	29

Introduction

1 The Government is fully committed to ensuring that all schools and teachers are in a position to deploy new information and communication technologies (ICT) to raise educational standards, to enhance learning and to prepare young people with the ICT skills they will need in society and at work in the 21st Century. Following the launch of “*Open for Learning, Open for Business*” in November 1998, the **National Grid for Learning** programme, the most ambitious ever undertaken in terms of targets and investment, is now well underway.

2 The **National Grid for Learning (NGfL)** is a facility for developing educationally valuable content on the Internet and for providing access for that content through schools, colleges, universities, libraries, homes, workplaces and elsewhere. It also incorporates training for serving teachers in the use of ICT in the classroom and a rolling programme of independent evaluations of new educational technologies. Together with related initiatives such as the University for Industry and ICT learning opportunities, the **Grid** will help to remove barriers for learning and so revolutionise learning opportunities in the UK.

3 The **NGfL** forms part of a co-ordinated programme of investment totalling over £ 1.6 billion up to 2002 which underpins the delivery of the Government’s targets for ICT in education and lifelong learning over this period. These include:

- serving teachers to be confident and competent to teach using ICT;
- all schools, libraries, colleges and universities connected to the **NGfL** enabling perhaps some 75% of teachers and 50% of pupils to have their own email addresses;
- most school leavers to have a good understanding of ICT;
- making Britain a world leader in the field of digital learning;
- DfEE communications with the education service to be mainly electronic

4 The **National Grid for Learning** in the 21st Century will:

- be the national focal point for learning on the Internet;
- be the gateway to high quality on-line educational resources for teachers, pupils and other learners to support the strategy of raising standards and social inclusion;
- promote certified managed service suppliers who can provide schools and other educational institutions

with computer networks at predictable value for money prices and with a guarantee of quality;

- ease the administrative burden on schools and LEAs through the use of electronic communications;
- give access to pilot GCSE course material being developed for delivery through digital TV, and to other high quality resources which might be delivered through the high speed networks that are currently being developed on a regional basis;
- be supported by the **New Opportunities Fund** ICT training for UK serving teachers and school librarians and the funding being made available by the NOF for the New Library Network and Community Grids for Learning through the Community Access to Lifelong Learning (CALL) programme.

5 This Statistical Bulletin reports on a survey of ICT provision in schools in England carried out in March 1999. It illustrates the progress which schools have made towards meeting the Government’s targets with the benefit of the first round of NGfL funding in 1998-99. Further surveys of ICT provision in schools will be carried out annually each March.

Survey Methodology

6 The ICT Survey is a major source of information about the availability and use of information and communication technologies in primary secondary and special schools in England. The survey collected information on the number and type of computers available in schools; expenditure and sources of funding; ICT development plans; the extent of the use of ICT across curriculum subjects and year groups; the use of Internet and other electronic network communications links; teacher usage of computers and their confidence in the use of ICT in the curriculum. It is a sample survey and the sample is chosen to be representative of different types of school throughout the country. Responses were received from 667 primary, 706 secondary and 309 special schools: response rates of 55%, 49% and 52% respectively of the chosen sample. As the response rates were relatively low the distribution of responding schools was compared to the distribution in the original and adjustments were introduced to ensure that the resulting figures were representative of the characteristics of the chosen sample. In the main body of the text the figures and percentages given are the best estimate for the particular number or percentage. The **Statistical Annex** describes how confident we can be that the reported figures for some of the key statistics in the **Summary table** reflect the true picture for England as a whole. It provides the lower and upper bounds for the confidence intervals for these figures.

SUMMARY TABLE

Main survey findings on Information and Communications Technology (ICT) in maintained primary, secondary and special schools: 1998 and 1999

	Primary		Secondary		Special	
	1998	1999	1998	1999	1998	1999
Computers in schools						
average computers per school	13	16	101	101	19	21
average pupils per computer	18	13	9	8	4	4
Expenditure on ICT						
Estimated total (£ millions)						
teaching and learning	49	105	119	136	7	12
school management and administration	19	20	24	25	2	4
<i>Average per school (£)</i>						
teaching and learning	2,600	5,700	33,300	38,200	6,034	9,674
school management and administration	1,000	1,100	6,800	7,200	1,523	3,668
<i>Average per pupil (£)</i>						
teaching and learning	11	27	38	45	73	124
school management and administration	4	5	8	8	18	47
Connected to the Internet						
percentage of schools	17	62	83	93	31	60
E mail Access						
percentage with personal e-mail address:						
teachers	2	15	9	32	2	14
pupils	-	4	3	12	<1	4
ICT Development Plan						
Percentage of schools with a plan	53	79	83	90	31	85
Teacher use of ICT						
percentage who feel confident to use ICT within the curriculum						
	65	68	61	66	65	68
percentage who have received some training in ICT						
	90	92	85	88	89	92
percentage who have received updated training within the last two years						
	45	46	36	39	46	45

KEY FACTS

Expenditure on ICT

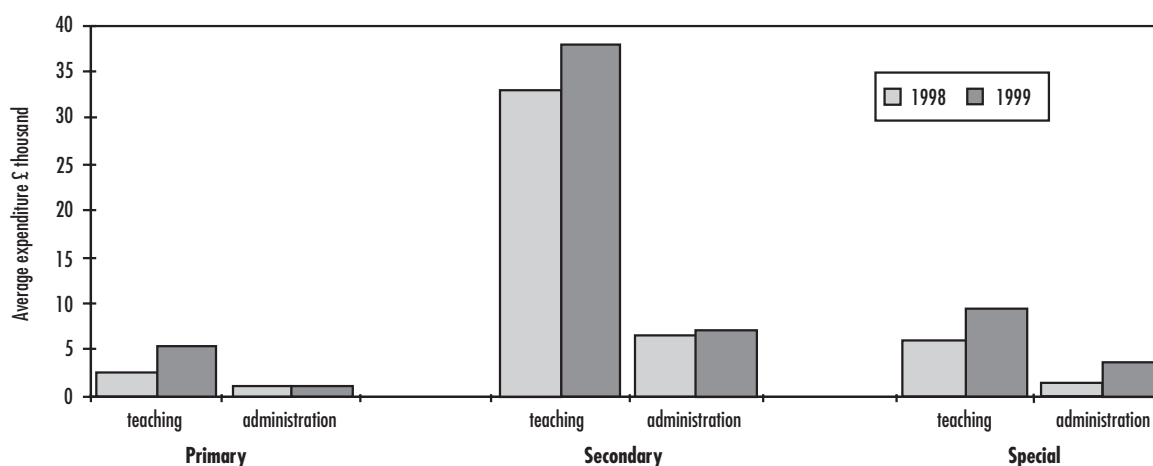


CHART 1:

Average expenditure per school on computers for teaching and learning or school administration by type of school: 1998 and 1999

The average expenditure on computers per school:

- rose in all schools between 1998 and 1999;
- was higher for secondary schools than for primary schools;
- was higher in special schools than in primary schools
- generally, rose by a larger amount for teaching and learning than for administrative purposes.

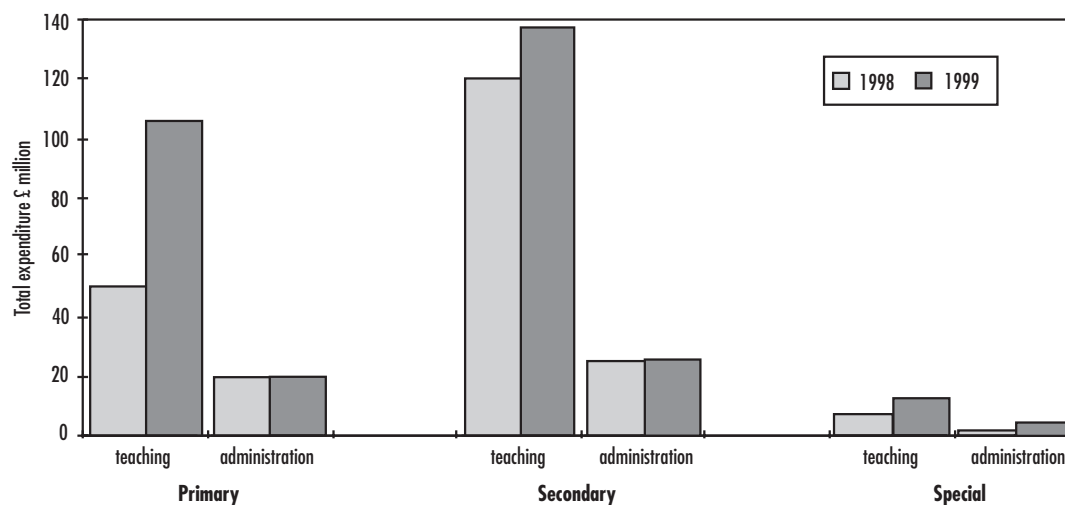


CHART 2:

Total expenditure on computers for teaching and learning or school administration by type of school: 1998 and 1999

The estimated total expenditure on computers for in maintained schools in England:

- rose in all schools between 1998 and 1999: there was a particularly marked rise in expenditure by primary schools on computers for teaching and learning;
- was higher for secondary schools than for primary schools;
- was much lower in special schools which is as would be expected because of the much smaller numbers of pupils in this type of school.

Computers in Schools

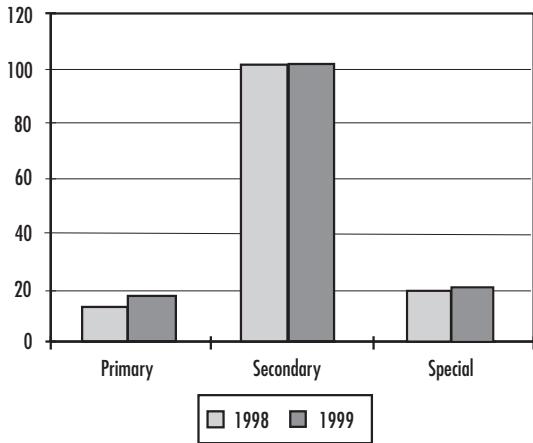


CHART 3:
Average number of computers per school

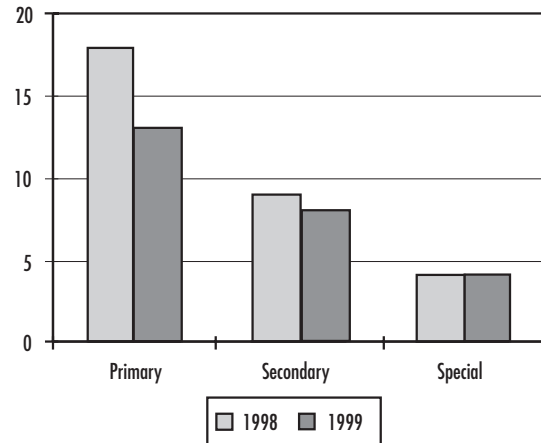


CHART 4:
Average number of pupils per computer

Between 1998 and 1999:

- there was a slight rise in the average number of computers per school for all types of school;
- the average number of pupils per computer improved from 18 to 13 in primary schools and 9 to 8 in secondary schools.

See Section 2 for more details about numbers, ages and types of computer and expenditure on computers in schools.

Access to the Internet

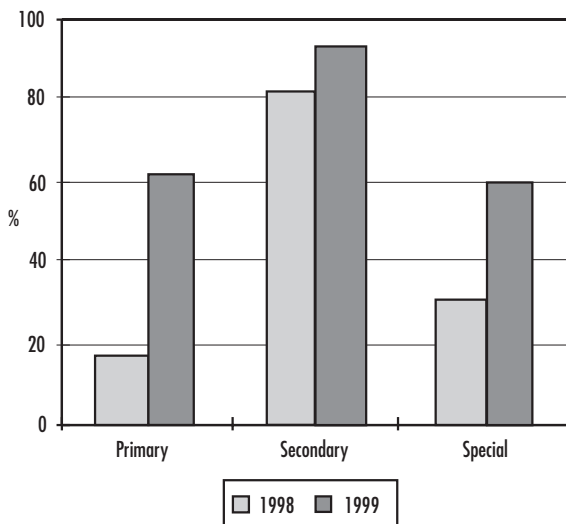


CHART 5:
Percentage of schools with access to the Internet

Between 1998 and 1999 there was an increase in the percentage of schools who had access to the Internet. The increase was largest in primary and special schools.

About 60 per cent of primary and special schools had access to the Internet in 1999 compared to under 20 per cent of primary schools and about 30 per cent of special schools a year earlier. The percentage of secondary schools with access to the Internet rose from 83 to 93 per cent over the same time period.

See Section 3 for more details of access to the Internet in schools and use of e-mail and Internet by teachers and pupils.

Teachers' confidence and training in the use of ICT

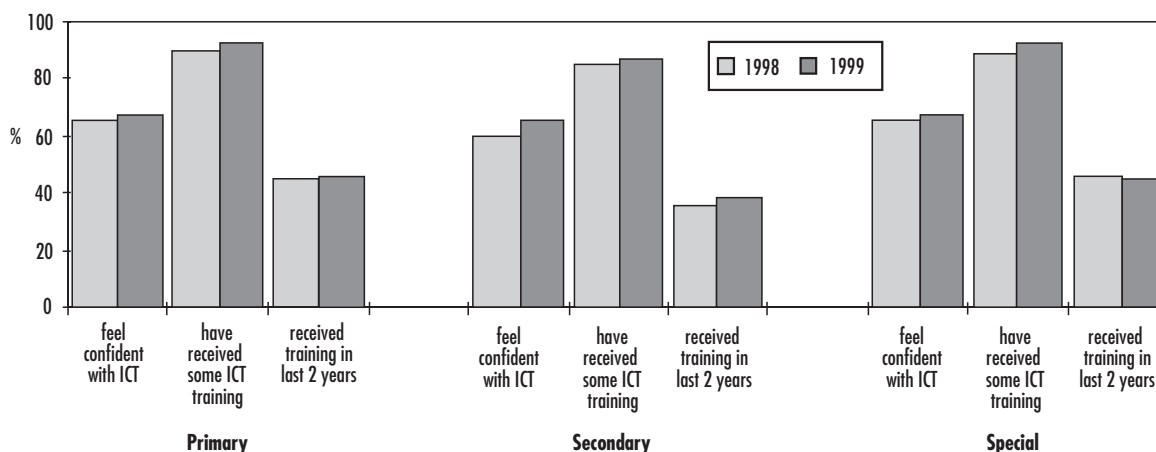


CHART 6:

Teachers' confidence and training in the use of ICT by type of school: 1998 and 1999

The proportion of teachers who felt confident in the use of ICT in the curriculum increased between 1998 and 1999 in each type of school: the largest increase was in secondary schools where the percentage of teachers who said that they felt confident rose from 61 per cent in 1998 to 66 per cent in 1999.

In 1999 over 90 per cent of teachers in all schools had received some form of training in the use of ICT – and each had shown a slight increase compared to 1998.

See Section 4 for more details about teachers' confidence and training in the use of ICT and about the contribution of ICT to teaching, learning, administration in schools.

Support for ICT

Almost all schools had an ICT co-ordinator. Over half of the ICT co-ordinators in secondary and special schools were given non-teaching hours which were available to support ICT work. However, only about one in five ICT co-ordinators in primary schools had non-teaching hours for ICT support work.

The most commonly reported sources of support for ICT from outside the school were in-service training courses and LEA funded advisor/computer centres.

See Section 5 for more details about sources of support available to schools for ICT, including training and curriculum support.

SECTION 1

ICT DEVELOPMENT PLAN

Background

1 In October 1997, local education authorities were invited for the first time to bid on behalf of their schools for money under the National Grid for Learning Standards Fund in 1998-99, to enable them to invest in high quality ICT provision and secure access to the internet.

2 The expenditure supported in 1998-99 was £102 million with 50% being provided by the LEAs. Bids were approved on a competitive basis with the main criteria that the LEA had a development plan for the use of ICT in its schools which itself builds on individual schools development plans in a way which is consistent with the Government's targets. There was also a particular focus on provision for primary schools and other schools which are comparatively less well equipped.

3 Table 1 shows the percentage of schools that in March 1999 had drawn up an ICT development plan and the proportion of these which had included the various elements as listed.

4 Ninety per cent of schools included teachers professional development in their ICT plans. Three quarters of secondary schools included measures to protect pupils against on-line access to undesirable materials compared to half of primary and special schools. Other issues that featured in a high majority of schools plans included 'hardware and software upgrades' and 'financial and curriculum planning'.

TABLE 1:
Factors included in School's ICT development plans

	Percentage of schools		
	Primary	Secondary	Special
Percentage of schools:			
which had a ICT development plan (%)	79	90	85
which had plans which were available to parents (%)	51	42	61
Percentage of schools which included in their plan:			
curriculum planning incorporating the use of ICT	76	84	82
creation and sharing of content with other schools	23	32	26
development of new issues of ICT across the curriculum	76	86	81
teachers' professional development in the use of ICT for teaching and learning	92	90	90
financial planning for the development of ICT facilities	84	87	87
development of the hardware provision, equipment upgrades, networking etc	86	94	92
acquisition of new software	83	81	87
repair and maintenance of equipment	63	75	76
depreciation cost of equipment	17	25	23
disposal of redundant equipment	19	23	25
ICT staff recruitment	11	28	18
provision for equipment for school management and administration	54	65	52
training of senior managers and administration staff	56	57	52
measures to protect against on-line access to undesirable materials	56	76	55
the use of ICT facilities outside school hours	30	69	33
the use of ICT facilities for community purposes	24	50	17

SECTION 2

FINANCE AND COMPUTERS IN SCHOOL

Expenditure and sources of funding

5 The previous survey carried out in 1998 has provided the bench mark for evaluating the roll out of the **Grid**. With the focus in the first year of funding on primary schools, expenditure by such schools in 1998-99 on ICT for teaching and learning more than doubled compared to 1997-98 from £49 million to £105 million (or average per school from £2,600 to £5,700). **Table 2** shows the relative expenditure by schools on 'teaching and learning' and on 'management and administration'.

TABLE 2:
Expenditure on ICT in schools

	Primary		Secondary		Special	
	1998	1999	1998	1999	1998	1999
Expenditure on ICT						
Estimated total (£ millions)						
teaching and learning	49	105	119	136	7.4	11.7
school management and administration	19	20	24	25	1.9	4.4
<i>Average per school (£)</i>						
teaching and learning	2,600	5,700	33,300	38,200	6,053	9,674
school management and administration	1,000	1,100	6,800	7,200	1,523	3,668
<i>Average per pupil (£)</i>						
teaching and learning	11	27	38	45	73	124
school management and administration	4	5	8	8	18	47

Source: ICT in school survey (1998 and 1999)

TABLE 3:
Sources of funding for information and communications technology in the financial year 1998-99

	percentage		
	primary	secondary	special
School budget allocated under			
Local Management of schools	46	60	59
National Grid for Learning Standards fund	34	10	24
Local Education Authority	6	6	5
Central Government	3	5	3
PTA / Parents	6	1	4
TVEI	.	.	.
Specialist Schools Initiative	.	10	.
Private sector sponsorship	1	2	2
Other	4	5	4

. Not applicable

- Negligible (ie less than 0.5)

6 One requirement of the NGfL standard fund grant to LEAs in 1998-99 was that at least 95% should be devolved to recipient schools, with no more than 5% retained to the LEA for overall management and co-ordination. **Table 3** shows that NGfL Standards Fund, as a proportion of all sources of funding for ICT in primary school, was 34%. This compares with 10% in secondary schools and 24% in special schools.

7 **Table 4** shows the breakdown of overall expenditure on hardware, software, training and technical support.

8 The allocation of expenditure in primary, secondary and special schools was similar to the extent that the highest proportion of expenditures involved 'computers, robots and related facilities'.

9 The ratio of spend on teaching and learning compared to administration was 5.2:1 in primary schools, 5.3:1 in secondary schools and 2.6:1 in special schools.

HARDWARE AVAILABLE IN SCHOOLS

Numbers of computers available

10 The impact of the Government's investment programme with a focus in the first year on equipping primary schools has led to an increase in the total stock of computers to 292,000 from 238,000 in 1998 producing an average of 16 per school compared to 13 in 1998. This has also led to an improvement in the number of pupils sharing a computer, down from 18 in 1998 to 13 in 1999.

TABLE 4:
Average expenditure on information and communications technology in financial year 1998-99

	Expenditure on teaching and learning		Expenditure on administration	
	per school £	per pupil (1) £	per school £	per pupil (1) £
Primary				
Computers, robots, software & other materials & peripheral equipment, upgrades & replacements	4,376	21	617	3
Software and on-line content	644	3	85	0
Teachers who attended in-service training (INSET) courses on the use of new technologies and advisors employed to visit school	1,124	5	85	0
Telecommunications and Internet Service Provider charges	238	1	.	.
Technical, maintenance & other support	415	2	324	2
Overall average	5,729	27	1,111	5
Secondary				
Computers, robots, software & other materials & peripheral equipment, upgrades & replacements	26,660	31	4,294	5
Software and on-line content	3,744	4	760	1
Teachers who attended in-service training (INSET) courses on the use of new technologies and advisors employed to visit school	1,104	1	310	0
Telecommunications and Internet Service Provider charges	1,138	1	.	.
Technical, maintenance & other support	4,951	6	1,770	2
Overall average	38,206	45	7,156	8
Special				
Computers, robots, software & other materials & peripheral equipment, upgrades & replacements	5,880	75	1,763	23
Software and on-line content	921	12	125	2
Teachers who attended in-service training (INSET) courses on the use of new technologies and advisors employed to visit school	842	11	297	4
Telecommunications and Internet Service Provider charges	299	4	.	.
Technical, maintenance & other support	1,732	22	1,483	19
Overall average	9,674	124	3,668	47

(1) Pupils of all ages

. not applicable

Types of computers available

11 There were on average 14 desktop models, **Table 5**, 1 laptop model and less than 1 palmtop model in every primary school. 36 per cent of desktops, 10 per cent of laptops and 17 per cent of palmtops were over five years old. Forty-six per cent of desktops had multi-media facilities compared with approximately 28 per cent of laptops.

12 Thirty-three per cent of computers, **Tables 6 and 7**, in primary schools used for management and administration purposes were over 3 years old. The figures for secondary and special schools were 36 per cent and 31 per cent, respectively.

13 There were on average 3 computers per school, **Table 8**, linked to the Internet and to an internal schools network in primary and special schools, which represents 19 and 14 per cent respectively of all computers in these schools. Twenty-seven computers per Secondary school were linked to the Internet with sixty-two computers per school linked to an internal school network.

Other hardware items available

14 There was an average of 21, 56 and 28 additional hardware items, **Table 9**, other than computers available in primary, secondary and special schools, respectively. The most commonly available hardware items in all school types were printers and CD-ROM drives.

Deployment of computers in schools

15 Fifty-six per cent of the computers in primary schools, **Table 10**, were permanently located in the study area and classrooms whilst almost one fifth were freely available throughout the school. In secondary schools, 81 per cent of the computers available were distributed on a broadly equal basis between study areas or classrooms and designated ICT rooms. The distribution of computers in special schools was broadly similar to that for primary although there as a tendency for more to be in designated ICT rooms.

TABLE 5:
Computers available in school mainly for curriculum purposes

	Average computers per school			Percentage of computers over 3 years old			Percentage of computers over 5 years old			Percentage of computers with multi-media facilities			Percentage of computers assigned to specific teachers for their			Percentage of computers limited in function personal use		
	Primary	Secondary	Special	Primary	Secondary	Special	Primary	Secondary	Special	Primary	Secondary	Special	Primary	Secondary	Special	Primary	Secondary	Special
models																		
Desktop	14	95	19	55	51	54	36	31	36	46	38	52
Laptop	1	5	2	24	38	28	10	17	12	28	21	23	47	41	47	32	27	31
Palmtop	-	1	0	53	55	47	17	20	23	.	.	.	6	17	34	31	23	41
Overall	16	101	21	52	50	51	34	30	33	44	36	49	37	36	46	32	26	32

. not applicable

- less than 0.5

TABLE 6:
Computers available in school used for management and administration purposes

	Average computers per school	Percentage of computers over 3 years old	Percentage of computers over 5 years old	Percentage of computers with multi-media facilities
primary	2	33	13	31
secondary	13	36	14	30
special	4	31	12	34

TABLE 7
Computers in school linked to internet

	Average computers per school	Percentage of computers over 3 years old	Percentage of computers over 5 years old	Percentage of computers with multi-media facilities
primary	3	5	2	44
secondary	27	18	5	49
special	3	9	2	55

TABLE 8
Computers in school linked to internal school network

	Average computers per school	Percentage of computers over 3 years old	Percentage of computers over 5 years old	Percentage of computers with multi-media facilities
primary	3	15	6	34
secondary	62	36	18	35
special	3	17	7	46

TABLE 9:
Other hardware items available in schools

	Average number of hardware items per school		
	Primary	Secondary	Special
Modem	1.6	3.0	1.7
Fax	0.5	0.7	0.6
CD ROM Drive	7.2	26.6	10.8
Scanner / Digitiser	0.5	2.4	1.2
Digital camera	0.5	1.4	1.1
Cable Service Connections	0.5	0.8	0.7
Satellite Service Receivers	-	0.3	-
Printer	9.4	19.8	11.4
Electronic whiteboards	-	0.1	-
Electronic projectors	0.1	0.4	0.1
CAD/CAM UNITS	.	.	0.1
Overall	20.5	55.5	27.7

. not applicable

- less than 0.5

TABLE 10:
Deployment of computers as reported by headteachers
Deployment of computers as a percentage of those available

	teaching and learning					management and administration			
	Library or central learning resource area	Permanently located in ICT Room	Permanently located in study area or classroom	Freely available throughout school	Assigned to specific children with SEN	Other	Staff rooms	Secretary's office	Headteacher's office
Primary	6	12	56	19	2	4	10	60	30
Secondary	8	43	38	4	3	3	47	43	9
Special	5	17	52	17	3	6	26	49	25

SECTION 3

INTERNET AND ELECTRONIC COMMUNICATIONS TABLES

Access to the Internet

16 Substantial progress towards achieving the targets for ICT is now being made, **Table 11**, 62% of primary schools now report connections to the Internet which marks almost a fourfold increase compared to 1998. Similar figures for secondary and special schools were 93% and 60%, the latter representing a two fold increase compared to 1998. In each category, the most common form of access is via a computer network, with a significant proportion of primary and secondary schools (58% and 70%, respectively) being connected to the Internet at ISDN level or higher. In special schools, Internet access was primarily through a stand alone computer using a modem or a computer network using a modem.

17 Just over half of secondary schools who had internet access had created their own website compared to just under half of primary and special schools. **Table 12** gives a breakdown of the internet sites and the

proportion of teachers, pupils and administration staff that access these sites.

Pupils and teachers with personal e-mail addresses

18 In primary schools, **Table 13**, 15 per cent of teachers now have their own e-mail address compared with 32 per cent in secondary schools and 14 per cent in special schools. Although the proportion of pupils with their own e-mail address is somewhat less than this the use of e-mail has increased significantly for both teachers and pupils compared to 1998.

19 In all schools, **Table 14**, e-mail was the most commonly used electronic service communication, as reported by 44 per cent of primary and special schools and 70 per cent of secondary schools, with the main use being for administration.

TABLE 11:
Number and percentage of schools connected to the Internet by source of access (1)

	Primary	Secondary	Special
number of schools connected to the Internet	11,221	3,294	722
Percentage of schools:	62	93	60
of which access through (1):			
stand alone computer using a modem	57	52	62
computer network using a modem	8	12	43
computer network using an ISDN connection	43	55	14
computer network using a leased line	2	5	0
computer network using a broadband connection by cable	11	9	9
computer network using a broadband connection by satellite	1	0	3
computer network using a broadband connection by microwave	1	1	0
other	2	1	2
Average number of internet access points	4	26	5
Percentage of schools who made use of additional curriculum content provided by their ISP (%)	48	52	49
Percentage of schools who have their own web site	21	54	22

(1) Percentage of schools recording internet access through this one source or in conjunction with other forms of access.

TABLE 12:
Percentage of schools who use the internet link to investigate resources

	Primary			Secondary			Special		
	Teachers	Pupils	Administrators	Teachers	Pupils	Administrators	Teachers	Pupils	Administrators
Use of internet(1)	51	29	23	87	63	53	51	29	27
of which use (%)									
Web site:									
NGfL	77	28	43	82	17	48	74	27	32
DfEE	69	2	65	83	3	80	77	2	66
BECTA	42	3	29	62	4	31	54	0	24
OFSTED	66	0	54	82	2	72	80	1	66
Other schools (within UK)	47	49	28	62	46	32	61	52	39
Other schools (outside UK)	23	32	11	39	39	14	29	22	12
FE/HE Institutions	8	2	7	40	39	25	18	9	12
Museum/Library	45	55	10	59	73	17	48	58	13
TTA	14	0	16	33	1	25	26	0	18
LEA	32	5	51	38	4	45	39	3	51
QCA	35	1	29	49	1	42	42	0	26
Outside UK									
European Schools Net (EUN)	3	1	1	14	9	4	6	4	1
Other International educational sites	17	21	7	34	31	9	24	14	5
Other	3	9	2	9	12	9	6	9	6

(1) Percentage of schools where internet was linked for one or more of the following uses

(2) Percentage of schools who recorded the following use of the internet. Schools may record more than one use.

TABLE 13:
E Mail access in schools

	Primary		Secondary		Special	
	1998	1999	1998	1999	1998	1999
E mail Access						
percentage with personal e-mail address:						
teachers	2	15	9	32	2	14
pupils	-	4	3	12	<1	4

Source: ICT in school survey (1998 and 1999)

TABLE 14:
Use of external electronic communication services

	Percentage of Schools								
	Primary			Secondary			Special		
	Teaching & learning	Admin	Overall	Teaching & learning	Admin	Overall	Teaching & learning	Admin	Overall
Electronic Mail	39	50	44	65	75	70	40	49	44
Video conferencing	2	1	2	16	3	9	4	0	2
Bulletin Boards	1	4	3	9	9	9	4	6	5
Other on-line Services	7	7	7	23	21	22	10	12	11

SECTION 4

USE OF ICT IN TEACHING

20 In September 1998 the Teacher Training Agency introduced a National Curriculum in Initial Teacher Training Institutions for the use of information and communications technology (ICT) in subject teaching. It will ensure that teachers emerging into the profession in the future have the capability and confidence to effectively use ICT to enhance the learning experience of pupils

21 Updating the ICT skills of serving teachers is recognised as crucial for the effective delivery of the National Curriculum. From April 1999, the Government made available £230 million through the **New Opportunities Fund** programme to train serving

teachers and school library staff across the UK in the effective use information and communications technology (ICT) in their subject teaching or library work. For teachers the purpose of the training is to raise the standards of pupils' achievements by increasing the expertise of serving teachers in the use of ICT in their teaching to the level expected of all Newly Qualified Teachers who will enter the profession in the future.

Use of ICT in areas of the curriculum

22 Table 15 shows the extent of use of ICT in curriculum subjects.

TABLE 15:
Use of information technology in areas of the curriculum in primary and special schools

	Percentage of schools			
	Substantial	Some	Little	None
Primary				
English	52	44	3	-
Mathematics	22	66	12	-
Science	6	55	35	3
Design and Technology	1	27	48	23
History	7	50	35	8
Geography	3	50	43	4
Art	10	47	35	8
Music	1	21	46	32
Physical education	0	1	10	89
Religious education	-	11	38	51
Other	2	2	3	20
Secondary school departments				
Art/Design	6	34	50	10
Business Studies	69	23	6	2
Design & Technology	34	51	15	1
English	9	59	31	1
Geography	6	53	38	3
History	3	45	45	6
Information Technology	98	2	0	0
Maths	7	55	36	2
Modern foreign languages	7	38	50	6
Music	17	39	33	11
PE	3	18	50	29
RE	3	30	53	13
Science	6	57	36	2
Special				
English	53	44	3	0
Mathematics	31	58	10	1
Science	10	51	34	5
Design and Technology	8	37	41	15
History	4	37	50	9
Geography	4	38	50	8
Art	8	45	37	10
Music	6	23	44	27
Physical education	0	3	19	78
Religious education	2	15	47	36

- Negligible (ie less than 0.5)

23 In secondary schools the highest levels of ICT use remain in departments which teach subjects traditionally associated with ICT, such as Business Studies, Design and Technology and of course ICT itself.

24 In primary and special schools, substantial use of ICT was mostly in English. Over half of these schools also indicated 'some' use of ICT in Mathematics.

25 The survey showed, **Table 16**, that very few primary and special schools taught ICT as a separate subject alone throughout the school but taught it either across the curriculum or as mixture of the two. In secondary schools ICT teaching was more evenly spread across the options available.

Teacher confidence and training (Tables 17 and 18)

26 The percentage of teachers who felt confident to use ICT for teaching the curriculum was slightly higher than in 1998 and remains still around two thirds of all teachers.

27 Just over 90 per cent of teachers in primary and special schools had received training in the use of ICT compared to just under 90 per cent in secondary schools.

28 The percentage of teachers who had received updated training within the last two years was 39 per cent in secondary schools to around 45 per cent in primary and special schools.

TABLE 16:
How ICT is taught in Primary, Secondary and Special Schools

Year Group *	Percentage of schools								
	Primary			Secondary			Special		
	Across the curriculum	As a separate subject	Both	Across the curriculum	As a separate subject	Both	Across the curriculum	As a separate subject	Both
Reception / 1 / 2	41	2	57	.	.	.	64	1	34
3 / 4 / 5 / 6	30	3	67	22	28	50	52	3	45
7 / 8 / 9	56	6	39	25	29	45	29	9	62
10 / 11	.	.	.	35	23	42	27	8	65
12 / 13	.	.	.	40	21	39	30	5	65

year groups 4-9 include middle deemed primary and secondary schools as appropriate
 . not applicable

TABLE 17:
Teacher confidence and training in the use of ICT

	Primary		Secondary		Special	
	1998	1999	1998	1999	1998	1999
Teacher use of ICT						
percentage who feel confident to use ICT within the curriculum	65	68	61	66	65	68
percentage who have received some training in ICT	90	92	85	88	89	92
percentage who have received updated training within the last two years	45	46	36	39	46	45

Source: ICT in school survey (1998 and 1999)

TABLE 18:
Teacher training in the use of ICT

	Percentage who have received				
	Initial awareness training only	One short in-service course	More than one short in-service course	Award bearing in-service course	No training
Primary	23	20	47	2	8
Special	29	23	39	1	8
Secondary					
Art/Design	27	25	31	2	16
Business Studies	17	17	47	8	12
Design & Technology	25	23	41	3	9
English	28	25	34	2	12
Geography	29	23	37	2	11
History	29	25	32	2	13
Information Technology	13	13	57	11	7
Mathematics	22	20	46	3	9
Modern Foreign Languages	30	23	34	2	12
Music	27	19	26	2	25
Physical Education	37	22	18	2	22
Religious Education	32	22	27	2	15
Science	25	26	39	2	9
All Departments	26	22	37	3	12

TABLE 19:
Contribution of ICT as reported by headteachers

	Percentage of schools reporting contribution of ICT to:								
	Primary			Secondary			Special		
	Substantial	Some	None	Substantial	Some	None	Substantial	Some	None
Quality of teaching	15	83	3	22	63	15	37	62	2
Quality of whole class or group learning activities	14	79	8	18	58	24	25	69	7
Quality of individual learning activities	27	71	2	24	62	14	51	49	0
Improvement in pupil motivation to learning	38	60	2	24	59	16	59	41	0
Improvement in pupils' learning skills	17	79	3	16	63	20	36	63	1
Efficiency of school administration	71	26	3	36	46	17	74	24	3
Improvement in home/school links	6	31	63	7	36	57	4	34	62

Contribution of ICT to teaching, learning and administration

29 Table 19 shows the contribution of ICT to the improvement of school activities. For example, 71 per cent of primary schools had reported that ICT had made a 'substantial' contribution to the efficiency of school administration. This compares with 36 per cent of secondary schools and 74 per cent of special schools. Additionally, 83 per cent of primary schools reported that the introduction of ICT had made 'some' contribution to the quality of teaching, this compares with 63 per cent of secondary and 62 per cent of special schools.

Special educational needs

30 Computers were used by pupils with special educational needs in 64 per cent of primary, 85 per cent of secondary and 94 per cent of special schools. The majority of these schools used computers for pupils with moderate and specific learning difficulties. Less than one per cent of pupils in primary and secondary schools with special educational needs had statements which prescribed the use of a computer. This compares with nine per cent in special schools.

TABLE 20:
Percentage of schools where computers were used by pupils with special educational needs

	Primary	Secondary	Special
Overall	64	85	94
of which:			
Pupils with moderate learning difficulties and specific learning difficulties	60	82	70
Pupils with severe learning difficulties	14	20	55
Pupils with sensory or physical disabilities	19	43	59
<i>Proportion of pupils who have statements which prescribe access to a computer</i>	0.2	0.4	9.2

National learning targets

31 A Report *“Skills for 2000”* on progress towards the National Targets in Education and Training was published by the National Advisory Council for Education and Training Targets (NACETT) in August 1997. This showed that only 8% of 19 year olds in 1995 and 11% in 1996 achieved level 2 competence in ICT. This compares with the target of 75 per cent by 2000.

32 In December 1997 the Department published a consultation paper *“Targets for our Future”* which sought views widely reflecting on the progress to date and to provide a fresh opportunity to consider what National Targets can and cannot be expected to be achieved. The response to the consultation *“Targets for our future”* was published in October 1998. The underlying aims of the new National Learning Targets to be achieved by 2002 is to increase our global competitiveness and to produce an inclusive society where everyone has an equal chance to realise their full potential. Although previously a target was set for key skills, including ICT, it has not yet been possible to set a new target for these. Nevertheless, key skills are regarded as extremely important and further advice will be sought from NACETT as soon as more robust means of measurement are in place and thus a target is practicable.

33 The survey showed that 61 per cent of secondary schools and 10 per cent of special schools offered examinable courses in information technology the academic year 1998-99.

GCSE exam results in Information Technology

34 By 2002 most school leavers should have a good understanding of ICT, based firmly on the standards prescribed in the curricula operating in the various parts of the UK, and there should be measures in place for assessing the level of school leavers' competence in ICT. At present, only a minor percentage of pupils leave school with a standard GCSE qualification in Information Technology.

35 Early estimates of the overall achievements of young people in GCSE examinations in ICT have been collated for the 1999 secondary school and college (16-18) performance tables and published in a statistical first release **GCSE/GNVQ and GCE A/AS/ADVANCED GNVQ results for young people in England, 1998/1999 (early statistics)** in October 1999. These estimates show that only 7 per cent of 15 year old pupils in school or college had obtained the benchmark grade A-C pass in GCSE level Information Technology in 1998-99, representing 55 per cent of pupils attempting the subject. 96 per cent of pupils who attempted the subject – or 13 per cent of fifteen year old pupils in school – achieved a grade A-G qualification. *Further information about the overall achievement of young people in GCSE or GCE A levels in the Statistical First Release can be obtained from Analytical Services (tel. 0171 273 5941).*

SECTION 5

SUPPORT FOR INFORMATION TECHNOLOGY

ICT co-ordinator support

36 Similar percentages of Primary, Secondary and Special schools reported that they had an ICT co-ordinator. Eighteen per cent of primary schools reported that their ICT co-ordinator had non-teaching hours available to support and co-ordinate ICT work, compared to 74 per cent of secondary schools and 58 per cent of special schools. On average, there were 2 hours per week per school available to the co-ordinator in primary and special schools compared to 4 hours per week in secondary schools.

TABLE 21:
Activities of the ICT Co-ordinator

	primary	secondary	special
percentage of schools	96	97	98
with ICT Co-ordinators			
with non-teaching hours	18	74	58
of which:			
average hours available per week	2	4	2

Sources and types of support

37 Eighty per cent of primary schools reported that they obtained curriculum support from in service training (INSET) courses. The other common source of curriculum support was The LEA funded adviser/computer centres reported by 77 per cent of schools. Seventy-eight per cent of primary schools reported that they received technical support from the LEA funded adviser/computer centre. Information on ICT was most often obtained from the LEA funded adviser/computer centres.

38 Sixty-nine per cent of secondary schools obtained curriculum support from 'in service training (INSET) courses'. The 'LEA funded advisor/computer centres' were the other common source of curriculum support, used by over 57 per cent of schools. The majority of secondary schools, 70 per cent, acquired technical support from 'vendors of ICT equipment and software' but over one half of schools also reported technical support from 'LEA funded advisor/computer centres'.

39 The most common source of curriculum support for special schools was from LEA funded adviser/computer centres and in-service training (INSET) courses, reported by 69 per cent and 72 per cent of schools respectively. Approximately, three quarters of special schools obtained technical support and information from LEA funded adviser/computer centres.

Further information

40 Enquiries about the contents of this bulletin should be addressed to Jennifer Beaumont, Room 140, Mowden Hall, Staindrop Road, Darlington, Co. Durham DL3 9BG (Tel 01325 392532 – direct line). Copies of previous issues of this Bulletin can be obtained from Analytical Services, Department for Education and Employment, Room 153, at the same address (Tel 01325 392683 – direct line). Press enquiries should be made to the Department's Press Office at Sanctuary Buildings, Great Smith Street, Westminster, London SW1P 3BT. (Tel 0171 925 5111– direct line.)

41 A summary of the survey findings can be found on the DfEE's home page on the Internet www.dfee.gov.uk. A copy of the previous survey carried out in 1998 and those earlier can be obtained from The Stationery Office or any good bookseller.

TABLE 22:
Sources of curriculum and technical support and obtaining information

	Percentage of schools								
	Primary			Secondary			Special		
	Curriculum support	Technical support	Information	Curriculum support	Technical support	Information	Curriculum support	Technical support	Information
LEA funded adviser/computer centre	77	78	73	57	54	61	69	79	72
Independent consultants/centres	13	26	18	17	29	27	22	34	31
Vendors of IT equipment and software	25	36	40	35	70	65	34	48	56
British Educational and Communication Technology Agency (BECTA)	17	9	22	25	6	38	14	7	30
In Service Training Courses (INSET)	80	28	32	69	39	42	72	27	36
Other educational institutions	13	6	12	18	9	25	21	10	27
Exhibitions	14	6	20	40	25	57	39	21	53
Other	1	1	1	2	3	4	2	2	2

STATISTICAL ANNEX

Confidence Intervals for the main survey findings on Information and Communications Technology (ICT):
maintained Primary, Secondary and Special schools in England: 1998 and 1999

	Primary Schools				Secondary Schools				Special Schools									
	1998		1999		1998		1999		1998		1999							
	Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper	Lower	Upper						
Computers in schools																		
Average per school	13	13	14	16	15	16	101	98	104	101	99	104	19	17	20	21	20	22
Expenditure on ICT																		
Average per school (£)																		
teaching and learning	2,600	2,400	2,900	5,700	5,300	6,100	33,300	31,000	35,500	38,200	36,100	40,200	6,034	4,600	7,500	9,674	7,500	11,900
school management and administration	1,000	800	1,200	1,100	1,000	1,200	6,800	6,100	7,500	7,200	6,800	7,600	1,523	1,300	1,700	3,668	1,500	5,900
Connected to the Internet																		
Percentage of schools	17	15	19	62	59	65	83	81	85	93	91	94	31	27	35	60	56	64
E mail Access																		
Percentage with personal e-mail address:																		
teachers	2	1	2	15	13	17	9	7	10	32	29	34	2	1	3	14	11	17
pupils	-	-	-	4	3	5	3	2	4	12	10	13	1	0	2	4	2	5
ICT Development Plan																		
Percentage of schools with a plan	53	50	56	79	77	81	83	81	85	90	88	91	31	22	35	85	82	88
Percentage of teachers who:																		
feel confident to use ICT																		
within the curriculum	65	62	68	68	65	70	61	58	64	66	64	69	65	61	69	68	64	72
have received some																		
training in ICT	90	88	92	92	90	93	85	83	87	88	86	90	89	86	92	92	90	94
have received updated training																		
within the last two years	45	42	48	46	43	48	36	33	39	39	36	42	46	42	50	45	41	50

Statistical sampling error

Estimates produced from a survey of a sample of schools may differ from the true figures for all schools. This is known as sampling error, and it is important to know the extent of this error when interpreting the results. The size of error depends on the size of the sample – in general, the smaller the sample the larger the error.

The 95% confidence interval for an estimate gives the range within which there is a probability of 0.95 that the true figure lies. The 95% confidence interval for an estimated percentage, p , is given by the formula:

$$p \pm 1.96 \times \sqrt{(p(100-p)/n)}$$

where n is the sample size. The larger number produced from this calculation is called the *upper bound* and the

smaller is called the *lower bound* for the confidence interval. We can be reasonably sure that the true figure lies somewhere between the lower and upper bound. In the Table lower and upper bounds are given for some of the key statistics.

For example, the survey found 62 per cent of primary schools were connected to the Internet in 1999. In the table in this Annex, the lower bound for this number is given as 59 per cent and the upper bound as 65 per cent. What we can say about the percentage of primary schools in England connected to the Internet at the time of the survey is that:

‘It is reasonably certain that between 59 per cent and 65 per cent of primary schools in England were connected to the Internet.’