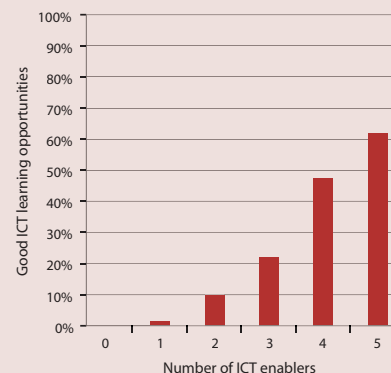


ICT enablers and ICT learning opportunities



Five factors are identified that are present in the development of good ICT learning opportunities in secondary schools:

- ICT resources
- school leadership
- ICT leadership
- general teaching
- ICT teaching

Each of these five enablers are necessary, but not sufficient in themselves to provide good ICT learning opportunities, although good ICT learning opportunities increase significantly as the number of ICT enablers in place increases.

Secondary schools with a high number of ICT enablers in place usually had good general leadership and good general teaching, so providing a sound foundation on which to build their ICT capability.

In secondary schools, ICT teaching tends to precede ICT leadership followed by ICT resources. This differs from findings in the primary study where ICT development followed a logical progression in which ICT leadership preceded ICT teaching. However, the findings do suggest that ICT resources are not being wasted in those secondary schools that are not yet able to make effective use of them.

As with primary schools, however, there is a necessary concern for those schools which do not have the base levels of leadership and teaching on which to build.

The analysis also reaffirms that the provision of good ICT learning opportunities is not dependent on the socio-economic background of schools and the prior attainment of pupils.

Although there is still a great deal of work to be done in improving the ICT learning opportunities available to all, an increasing number of schools and pupils from a full range of backgrounds now have the chance to harness the benefits of ICT in teaching and learning as identified in the report.

As with previous reports, the analysis is based on statistical association and so cannot prove a particular causality (that is, whether one factor causes or helps to cause another factor). However, it does give further credibility to the conclusion that the impact of ICT is dependent on how it is used in the classroom.

www.becta.org.uk/research

Further information

A PDF of this summary, and PDFs of the report on which it is based, can be downloaded from the Becta Research website - as can supporting data in the form of tables of correlation between Ofsted grades and QCA attainment data.

The complete findings about the relationship between ICT resources and school standards, published as part of the DfES/Becta research and evaluation series, are also available from the Becta Research website.

<http://www.becta.org.uk/research/reports/ictresources.cfm>



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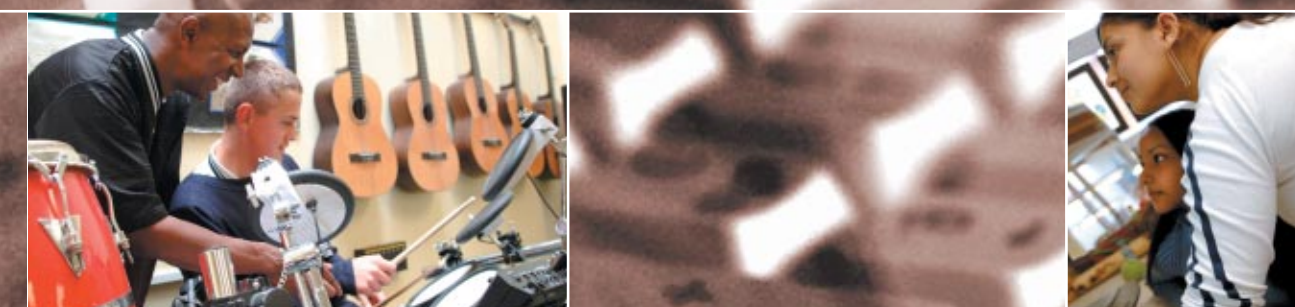
Secondary Schools – ICT and Standards

An analysis of national data from
Ofsted and QCA by Becta

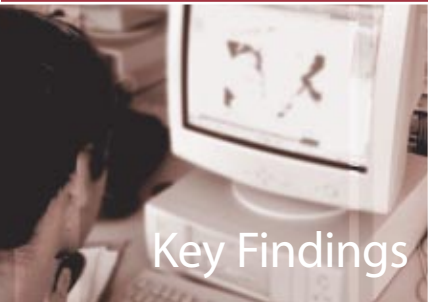
August 2003

Key findings

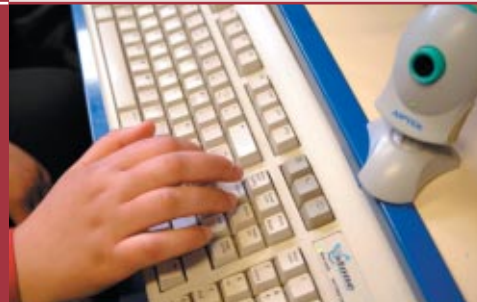
For the past three years Becta has conducted extensive research analysis aimed at exploring the relationship between schools' use of ICT and pupils' achievement in national tests and examinations. This leaflet presents key findings from the report *Secondary Schools – ICT and Standards*.



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Key Findings

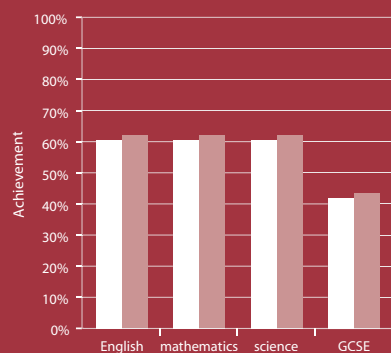


Introduction

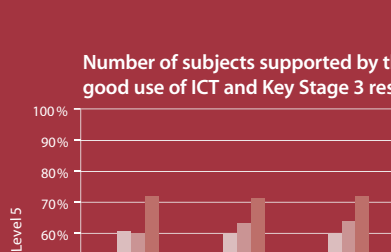
Becta's latest evidence about ICT and standards in secondary schools is based on a detailed analysis of the results of Ofsted inspections and QCA data on schools' performance in national tests for the academic year 2000-01. The analysis focuses on the quality of the opportunities to learn with ICT provided to pupils, and whether there is any link to improved standards. The findings support the case that ICT can help to improve teaching and learning in our schools.

The full findings are published in the report Secondary Schools – ICT and Standards. This leaflet provides a synopsis of the main findings. Information about how to obtain the full report is given at the end of this summary.

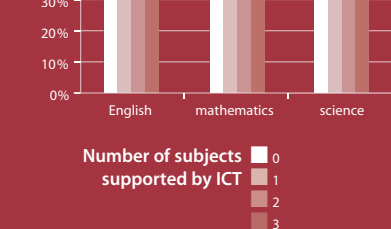
ICT learning opportunities and pupil achievement



ICT learning opportunities and pupil achievement



Number of subjects supported by the good use of ICT and Key Stage 3 results



Number of subjects supported by the good use of ICT and Key Stage 3 results

ICT learning opportunities and pupil achievement

'ICT learning opportunities' refers to the amount and quality of opportunities provided by a school for pupils to develop their ICT experience. Good ICT learning opportunities exist where ICT has been used effectively to enhance the learning process and the specific learning objectives in a lesson. This requires awareness by teachers of how ICT can enhance pupils' learning, and the appropriate selection and management of ICT resources to meet pupils' curricular needs.

The first graph on the left shows the relationship between ICT learning opportunities and pupil achievement in schools where there are also good resources and good ICT teaching.

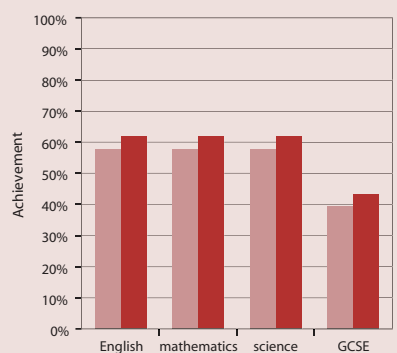
The scale on the left hand side of the graph represents the percentage of pupils achieving five or more level C passes or above in English, mathematics and science at Key Stage 3, and the equivalent at GCSE level. The height of the bars represents the average level of achievement by pupils in schools - differentiated by those schools where the ICT learning opportunities provided are satisfactory or worse, and those where the ICT learning opportunities are good or better.

For each core subject at Key Stage 3, and at GCSE level as a whole, there is a positive relationship between better ICT learning opportunities and higher pupil achievement. There is also a positive association between the number of subjects supported by good use of ICT, and results at Key Stage 3 and at GCSE.

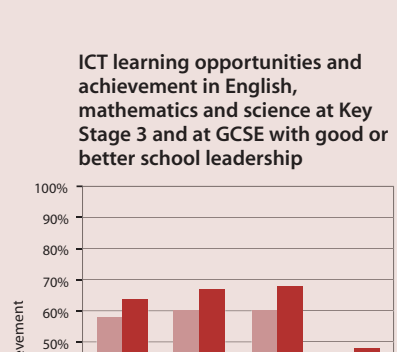
The findings relating to ICT and subjects in secondary schools correspond with the findings from the study of primary schools for the same period. Whereas at primary level, positive relationships could be attributed in part to the impact of the same teacher, in the same classroom, teaching ICT, English, mathematics and science, this is clearly not the case at secondary level. The findings might therefore suggest that where secondary school pupils have good ICT learning opportunities, they are able to apply and develop their ICT capability in subject specific work, and this in turn can have a positive impact on their achievements in other areas. They might also suggest, however, that schools that are generally effective both achieve highly and make good use of ICT.

Additional positive outcomes

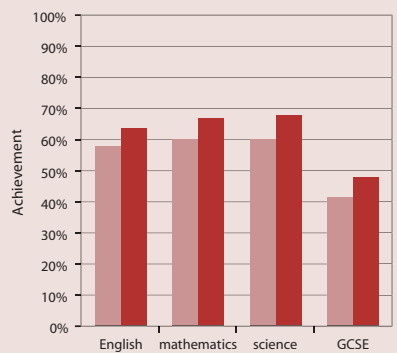
ICT learning opportunities and achievement in English, mathematics and science at Key Stage 3 and at GCSE with good or better ICT resources



ICT learning opportunities and achievement in English, mathematics and science at Key Stage 3 and at GCSE with good or better school leadership



ICT learning opportunities and achievement in English, mathematics and science at Key Stage 3 and at GCSE with good or better ICT leadership



ICT resources and ICT learning opportunities

The quality of ICT resources varies between secondary schools.

Good ICT resources must be present for a secondary school to offer good ICT learning opportunities to pupils, although good ICT resources alone will not guarantee good ICT learning opportunities.

Pupil achievement is higher where ICT learning opportunities are good or better, supported by good ICT resources.

Of course, the presence of ICT resources in a school does not automatically have an impact on achievement. The key factor is whether ICT is used effectively in teaching and learning, and in particular whether pupils have good quality opportunities to learn with ICT.

School leadership and ICT learning opportunities

For a secondary school to offer good ICT learning opportunities, good school leadership by the headteacher and key staff is important, but appears to have less of an impact than ICT resources.

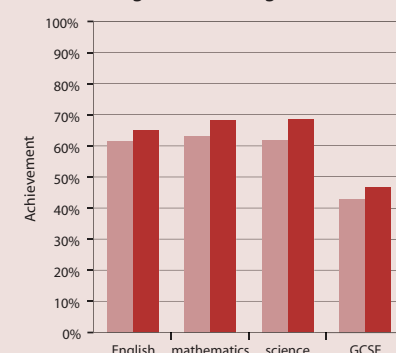
Pupil achievement is, however, higher where ICT learning opportunities are good or better supported by good school leadership.

ICT leadership and ICT learning opportunities

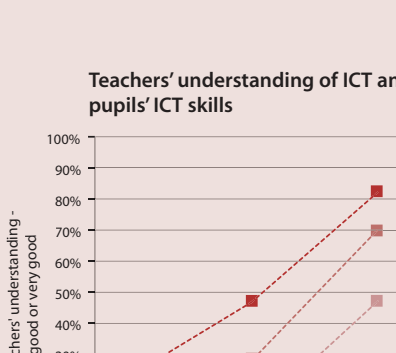
Good ICT leadership is essential for a school to offer good ICT learning opportunities. Where ICT leadership is unsatisfactory or worse, it is highly unlikely that good ICT learning opportunities will exist.

As with school leadership, pupil achievement is higher where ICT learning opportunities are good or better, supported by good ICT leadership.

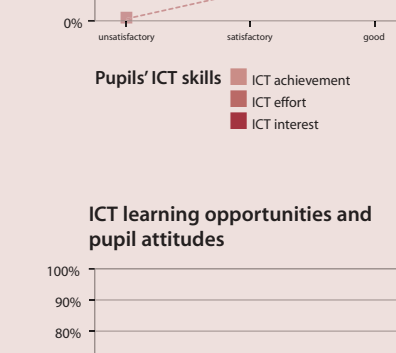
ICT learning opportunities and achievement in English, mathematics and science at Key Stage 3 and at GCSE with good or better general teaching



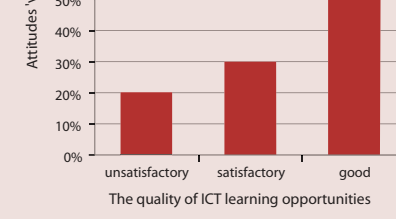
ICT learning opportunities and achievement in English, mathematics and science at Key Stage 3 and at GCSE with good or better general teaching



Teachers' understanding of ICT and pupils' ICT skills



Teachers' understanding of ICT and pupils' ICT skills



ICT learning opportunities and pupil attitudes

Teaching and ICT learning opportunities

Schools with good, or better, general teaching are typically more likely to offer good learning opportunities in ICT.

There is also an association between good teaching and teachers' knowledge and understanding of ICT both at Key Stage 3 and GCSE. There is generally a greater incidence of very good ICT knowledge and understanding when general teaching is good.

Once again, pupil achievement is higher where ICT learning opportunities are good or better, supported by good teaching.

ICT teaching and ICT learning opportunities

Good ICT teaching is also essential for a school to offer good ICT learning opportunities. If ICT teaching is less than satisfactory, it is unlikely that good ICT learning opportunities will exist. However, good ICT teaching alone will not guarantee good ICT learning opportunities.

As with general teaching, pupil achievement is higher where ICT learning opportunities are good or better, supported by good ICT teaching.

Where teachers' understanding of ICT is good, the ICT development of pupils is much higher.

The quality of ICT learning opportunities is positively related to the attitudes and behaviour of pupils in secondary schools.

Additionally, analysis revealed that the quality of ICT learning opportunities is also related to whether parents have a positive view of the school. Similar conclusions were made in the primary study.

ICT enablers